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The State in Higher Education

By HARRY WOODBURN CHASE

A Review of the Development of State Universities in the United States

THE American state university is a child of the growing impulse toward democracy that swept over the United States in the early days of its history as an independent nation. Certain of the principles and responsibilities which are characteristic of the modern state university were, however, recognized and discussed from our earliest colonial history. Both the subsidizing of institutions of higher education by public funds and the asserting of some form of public control over their operations are repeated practices in institutions founded before the Revolution.

Harvard was established in 1636 by a grant of funds from the General Court of Massachusetts Bay Colony and with a charter making it responsible to the General Court as the representatives of the people. Changes in the charter after a time curtailed the authority of the colony, but subsidies from the colony and, later, from the state continued until well on into the nineteenth century. William and Mary, at its foundation in 1693, received from the colony both land and revenues, and fourteen of its first board of eighteen were colonial officials. Yale annually for a period of years received legislative grants, but its board was so constituted as to avoid both civil and ecclesiastical control. Princeton received no public aid, but the governor of the colony was president ex officio of its board. Public aid from the city of Philadelphia was granted to the University of Pennsylvania, but no public control was exercised. King's College provided for both civil and ecclesiastical representation ex officio and a crown charter, though the alternative of legislative foundation and control was hotly

NOTE.—Printed also in *The Alumni Review* (University of North Carolina), January, 1930.

urged. Funds raised by lotteries were in part made available by legislative action. Brown was sectarian, and neither was subjected to public control nor given public subsidies. Rutgers provided that four of the chief civil officers of the colony should be ex officio members of its board. Dartmouth both received legislative grants and was affiliated with the colonial authorities through the presence of the governor of New Hampshire ex officio on its board.

Thus the origins of the oldest American colleges show the early public concern with higher education. To be sure, neither the principle of public control nor public support is defined clearly, nor was either practice universal. In fact, ecclesiastical control was more definite and widespread than that by public bodies.

With the latter half of the eighteenth century came a growing ferment of ideas. Not only in the realm of politics was this the case, but religious sects had been multiplying apace, and with their diversification the idea of the separation of church and state was gaining ground. Concepts of democracy in government were slowly emerging, and with the birth of national consciousness came a wide increase of interest in public affairs and institutions.

It was inevitable that to this whole complex of ideas the existing institutions came to be regarded as somewhat alien. Such beginnings of public control as have been pointed out were not very effective. Two of these institutions, indeed, were suspected of definite hostility to the Revolutionary cause: the charter of Pennsylvania was revoked, and King's College was closed. Almost all of them were organs of one or another religious sect, the self-perpetuating provisions in their governing boards stressing more and more the element of private control. They did not possess any widespread public confidence as instruments of the emerging popular democracy.

There ensues, consequently, one of those struggles which are typical of the dealing of a transitional age with institutions through which its thought is expressed. Could the older institutions be brought into line as public servants of their commonwealths, or would the creation of new ones be necessary?[1]

THE history of the attempt at public control of the older institutions begins with the struggle over the charter of King's College, in 1754, settled in favor of the Crown rather than the Assembly. It includes the unsuccessful attempt of the Legislature of Connecticut in 1763 to gain control of Yale; the revoking of the charter of the University of Pennsylvania in 1779, and the grant of the authority of its trustees to a new board in which state, church, and private citizens were all represented until in 1791 a self-perpetuating board was substituted; the foundation in 1784 of the University of the State of New York (the state board controlling secondary and collegiate institutions); the attempt of Massachusetts

[1] *See* Brown, E. E. *The Origin of American State Universities.* Berkeley, California: 1903, pp. 1–45 (University of California Publications in Education, Vol. 3). His account is especially full with regard to the colonial institutions and the struggle for their control, and is followed in this article.

for decades to assert some control over Harvard College. It reaches its climax in the Dartmouth College case when, in 1819, the Supreme Court of the United States held that

> under its charter Dartmouth College was a private and not a public corporation. That a corporation is established for purposes of general charity, or for education generally, does not, per se, make it a public corporation, liable to the control of the legislature.

Such attempts, then, failed, and their failure delayed for long periods of time or prevented altogether the foundation of state universities in the areas in which these older institutions were located. Of the colonial group only one, Rutgers, is now a state university by the standards of this association. Of the New England group, Vermont was the only state to provide in its early constitution for a state university. It was, in short, by the creation of new institutions that the movement was destined to proceed.

Out of the same ferment came the idea of a national university, urged by Washington, proposed as a part of the Constitution, but, as the standing committee of the association on the same can testify, it has remained in a quiescent state to this good hour.

IN TWO sections of the country the state university was to find its origins. In the South, the colonial tradition had involved the migration of students who desired college education to the North or to Europe, and the field was, for the most part, clear for the formation of institutions representing the newer public sentiment; in the Middle West all was plastic, and as settlement took place, public concern with education naturally reflected itself in the development of state universities.

Of state constitutions adopted before 1800, Pennsylvania and North Carolina, in 1776, both affirm that "all useful learning shall be duly encouraged and promoted in one or more universities."[2] Vermont, in 1777, before its admission to the Union, provided constitutionally for "one university." Massachusetts in 1780 devoted a whole section to Harvard College, and asserted control over it. Georgia in 1798 provided that "the arts and sciences shall be promoted, in one or more seminaries of learning; and the legislature shall . . . give such further donations and privileges to those already established as may be necessary to secure the objects of their institution." These seem to be the only mention of provisions for higher education in the early constitutions of the older states.[3]

Of the constitutional provisions that of Pennsylvania was carried out by a reorganization of the University. Vermont was chartered in 1791 and opened in 1800. Massachusetts has never developed a state university. Georgia, with a university already chartered in 1784 before its general constitutional provision, holds thus the oldest charter of any American state university serving throughout its whole history as a state university. It began operations in 1800. North

[2] Pennsylvania, September 28, 1776; North Carolina, December 18, 1776.

[3] *See* Hinsdale, B. A. "Documents Illustrative of American Educational History." *Report of the Commissioner of Education for the Year 1892–93.* Vol. 2. 1895. p. 1318. This account is an exhaustive compilation of original documents.

Carolina, chartered in 1789, opened in 1795. To consider the Southern group further, the University of South Carolina opened in 1805; Blount College, from which grew the University of Tennessee, was chartered in 1794, while Tennessee was still a territory. Virginia opened in 1825; Alabama in 1827. In 1848 came Mississippi; in 1860, Louisiana.

The part played by the Southern state universities in the ante-bellum South has never been adequately portrayed. The South made remarkable progress in higher education to 1860. Dodd in *The Cotton Kingdom* quotes some surprising figures from the census of 1860:

> Eleven thousand students were enrolled in the colleges of the cotton states, while in Massachusetts with half as many white people as were found in all the cotton states, there were only 1,733 college students. The income of all the higher institutions of the lower South in 1860 was $708,000. The six New England states spent only $378,469 per year in collegiate education, and their population of 3,235,000 sent only 3,748 young men to college.

The University of Virginia had nearly a thousand students. Good medical colleges existed at Charleston, Mobile, and New Orleans; and law schools were another early professional development. I quote again from Dodd:

> At the University of South Carolina Francis Lieber gave the best work in political science that was found in the country, and at the same time Joseph La Conte was feeling his way to a theory of the origin of species. The promise of the lower South in learning and science was so great that the ablest teachers of the time were not loath to settle there. Robert Dale Owens, one of the leading geologists in the North, was sorely disappointed when he failed to obtain a chair at the University of Alabama in 1847. And the elder Agassiz hardly knew whether to accept a position at Harvard or to remain as professor in the medical College at Charleston, where he did some of his greatest work.

Again, there was the University of Virginia which was founded by Jefferson as the capstone of a state system of education, a dream not to be realized for many years. It reflected both his conviction that the only salvation of democracy was the illumination of the darkness of ignorance and his faith in freedom, with its independent schools, its elective system, its faculty government, and its early developed honor system. With a strong faculty and a student body reaching nearly a thousand toward the end of its ante-bellum career, it held a place of power and influence in the South. The same was true, as already intimated, in South Carolina. Something of its strength is seen from the fact that after 1836 the salaries of its full professors were $2,500 annually. Student life, as it went on in one of these institutions, has been interestingly portrayed by Coulter, in his book *College Life in the Old South*, an account of life at the University of Georgia. In most of the universities the democratic urge that led to their formation had lost its vigor before the sixties brought them disaster. They were, for the most part, developed beyond the public-school system of their states, and to these systems they felt little responsibility. They mostly

lacked a sense of themselves as parts of a complete state system of education; they had become autocratic in tone and temper, and some of them were to pay dearly for this in the turbulent years to come.

The Civil War, of course, brought ruin to the Southern universities. Their student bodies and faculties were dispersed, their resources disappeared, their buildings destroyed, used for hospitals, or abandoned during the conflict or during the troubled years which followed. Something of what had happened to them may be gathered from the size of their student bodies in 1875, ten years after the close of the war. Dexter gives the figures. Alabama had 71 students, Georgia 202, Louisiana 8, Mississippi 55, North Carolina 67, South Carolina 86, Virginia 326. Theirs was a long, slow process of rebuilding, due both to the poverty of their states and to the necessity of readjusting themselves to new conditions. In these latter years, their development has again gone forward, in resources, in quality of work, in numbers, and in adjustment to the needs of the commonwealths they serve.

OUT of the democratic impulse of Revolutionary days there came into being another group of state universities, those of the Middle West. The famous Ordinance of 1787, later confirmed by the first Congress, contains the familiar sentence, afterwards so widely copied, with regard to provision for education in the old Northwest: "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The land-grant policy of the National Government for higher education begins with that year, when along with the sale of a million and a half acres of land to "The Ohio Company of Associates" went the agreement made by the purchasers with Congress that Section 16 in every township should be reserved for schools, and Section 29 for religion, while two complete townships (46,080 acres) were to be reserved for a university. This grant was confirmed on the admission of Ohio as a state, in 1802. Tennessee in 1806 was granted 100,000 acres, while

the Enabling Act for Indiana in 1816 granted the state two townships for a seminary of learning, and vested their control in the legislature of the state. The enabling acts for nearly all the public land states admitted since have contained similar grants, and, when omitted from the enabling acts, equivalent grants have been made at some other time. Beginning with the states admitted in 1889, Congress has, in each case except Wyoming, made specific grants in addition to the state university, and often also for a school of mines as well.[4]

As early as 1820 it was estimated that six million acres of land had been appropriated by Congress to the purposes of higher education. Such an attitude on the part of Congress grew naturally out of the feeling that higher education was a matter of public concern in the widest sense. The interest of the national government in

[4] Monroe, Paul. "National Government of the United States and Education." *Cyclopedia of Education*, Vol. IV. New York: Macmillan Company, 1925, pp. 372–82.

higher education in the states is thus as old as the nation.

There is a remarkable passage in the constitution of Indiana, written in 1816:

> It shall be the duty of the General Assembly, as soon as circumstances will permit, to provide by law for a general system of education ascending in regular gradation from township schools to state university, wherein tuition shall be gratis, and equally open to all.

Here, so far as I know, is the first expression of a group of fundamental ideas that have become a part of the creed of the modern state university; the doctrine that it is not an isolated unit, but the apex of the state's educational pyramid; the doctrine that tuition shall be free, still adhered to in spirit, if one compares the tuition of state universities with those of other universities, and the doctrines of equality of opportunity in education that the state universities still maintain in this day when other ideals have attracted strong adherents.

In accord with these principles, the University of Indiana was established as the Indiana Seminary in 1804. Ohio University at Athens dated from 1804; the academy from which grew the University of Michigan in 1837, dates from 1817. This academy, by the way, rejoiced in the euphonious name of Catholepistemiad, with chairs of Anthropoglossica, Physiognostica, Diegetica, and the like, thirteen in all.

Of the early group of state universities formed in the public-land states some, like Michigan, prospered from the start; some, like Wisconsin, fell on troubled days until the Morrill Act. This group of state universities, unlike those of the South, were from the start integral parts of state systems of education. They made their own traditions, and those traditions were those of democracy and liberalism.

THE Morrill Land Act was passed in 1861. For the foundation of a college for the teaching of agriculture and mechanic acts a grant of 30,000 acres of land to each accepting state was made for each member of Congress, subject to the provision that in such institutions there should be given instruction in military science and tactics. The purposes behind the bill are clear. With vast new territories opened and the enormous extension of agriculture involved, with the growing industrialization of the East the demand for skill and training in arts that lay outside the traditional professions became more insistent, further extension of the concepts of higher education became necessary. The struggle over the bill was long and intense. It had passed Congress practically in its final form in 1859, only to be vetoed by President Buchanan. His veto states so well one point of view concerning the relation of the National Government to education that I quote its heads:

> The government can not afford to do this; it will tend to make the states look to the Federal Government for assistance in other matters; it is not fair to all states alike; the government has no power to control the final expenditure of the funds; it will interfere with existing colleges, and, finally, it is unconstitutional.[5]

[5] Richardson, J. D. *Messages and Papers of the President.* Vol. 5, pp. 543–50.

The history of the results of the Morrill Act is well known. It was used in three ways: to strengthen existing state universities by compliance with its provisions, as in Wisconsin and Tennessee; to facilitate the creation of new state universities including required provisions from the start, as California, Ohio, Minnesota, Maine, Illinois, and others; and to create separate agricultural and mechanical colleges, resulting in the existence of the twenty-one so-called "separated" state universities.

The conditions that led in each state to the consolidation or separation of its institutions for higher education would make an interesting study. State funds have long since come to furnish the larger part of the incomes of the institutions established or strengthened by the Morrill Act. As new states have been admitted, land grants have been made to their universities, but all have turned to state legislatures for the bulk of their support. Funds from private sources, too, have played an increasing rôle in special activities of the state university; scholarships, fellowships, and loan funds for students, such enterprises as the Clements Library and the Law School development at Michigan, library collections, presses, funds for buildings, for research, and so on through a great variety of objects, have been made possible as the idea has grown that state and Federal funds need to be supplemented in various directions to realize the full possibilities of the institutions. The educational foundations have aided with grants; they have as a rule not endowed projects at state universities.

The growth of the state universities has been one of the amazing facts of higher education in America. In his *History of Higher Education in the United States* Dexter tabulates the figures from 1875 up to the opening of the century. In 1875 the total enrollment in the state universities listed at the time consisted of 2,340 students. By 1885 the number had grown to 25, the students to 4,599, and their combined faculties numbered 470. In 1903 the 36 existing state universities enrolled 41,369 students, and their faculties numbered 3,471.

Figures kindly assembled for me by Mr. Klein, of the Bureau of Education, show the following facts. In the year 1928 there were enrolled in all the institutions for higher education in America a total of 920,270 students. These institutions conferred in that year 118,716 degrees. The state universities of the country enrolled in that year 183,805 students. Certain comparisons of these institutions with the entire group are interesting. They enrolled one student in every five (5.07). They conferred 24.7 per cent of all degrees, 29 per cent of all Master's degrees, and 34 per cent of all Doctor's degrees. That these institutions should enroll one student in five, confer one degree in four, and one Doctor's degree in three is significant surely of the trend of their work. The proportion of students enrolled in the state universities of the country to those enrolled in all institutions is little different than it was in 1900. At that time all the state universities enrolled one student in 5.3; in 1910, one in 5.2; in 1920, one

in 4.3; and in 1926, one in 4.8. Their total enrollments had gone from 31,865 in 1900 to 183,805 in 1928. The degrees conferred by them include law, medicine, dentistry, pharmacy, veterinary medicine, arts and sciences, engineering, education, commerce, agriculture, home economics, music, forestry, journalism, library science, and nursing. Of their enrollment in 1928, 119,766 were men and 64,009 were women. Their instructing staffs made up a total of 11,164 men and 2,341 women. Such is the combined power of the American state universities in this year of grace.

MORE than a century and a quarter have passed since the first state universities were chartered. Today they number forty-nine, including Porto Rico, Hawaii, and the Philippines. They have grown strong and powerful. Of their spirit it may be said that there is a very real sense in which all universities, however founded or maintained, are simply universities. The intellectual temper of the state universities is that of American universities in general. Their educational opportunities are the same. Distinguished scholars are at home in them. Their libraries, their laboratories and equipment are in no way to be distinguished from those of other universities. Research and creative work go forward in them freely and amply. If, now and then, there has been political interference with individuals or administrations within them, their record of stability and the whole tends to throw into bold relief the genuine interest of American commonwealths in higher education. They are, then, universities in spirit and temper. But they are also universities with a peculiar obligation to the life of their commonwealths. Growing as they did out of the public concern in higher education, their traditions have inevitably been those of democracy and liberalism. This has, on the whole, been manifest in the point of view from which they have regarded their public duties. To be sure, they did not originate the policy of the extension of equal advantages to men and women in the same classes, but it has been the policy of most of them from their beginnings. They have regarded seriously their obligation as a part of the public-school systems of their states, by the nature of their admission requirements and processes, by their work for the training of teachers through schools of education, summer schools, educational conferences, and so on. They have done a great service to countless thousands of students by their attempts to keep the cost of education to the individual student as low as is consistent with quality and service. Almost all of them charge some tuition fees in these days of high costs, but a comparison shows an almost complete separation in amount between the state universities as a group and the stronger endowed institutions. At a time when, in the argument that the student should bear more of the cost of his education, the fact that was so clear to leaders of thought a hundred years ago, that an educated citizenship is the best form of social insurance for the future of the commonwealth, seems almost to be lost sight of, it is to be hoped that

these institutions will keep open permanently the door of opportunity.

Again, in the tradition of the modern state university is the conception of its direct responsibility to the state through extension work, service of its faculty on boards and commissions, the loan of its services for fact-finding; in other words, the conception of itself as not only a bulwark for the future, but as a servant of the present.

The state university still holds by those impulses of a democratic civilization that gave it birth. Here is both a satisfaction and a warning for the future. For I do not believe that, in the long run, there is anything that can replace in a state university that sense of obligation to its commonwealth as a whole on which it was founded. If the state university should lose that sense, then we may expect to see once more repeated that struggle of a people to express its ideas in institutional form and the creation of other types of institutions adapted to the spirit of the age. The origin and development of state universities show, if they show anything at all, how any generation tends to create in some fashion the forms that it feels express its own necessities.

The Revision at Oberlin College

By ERNEST H. WILKINS

An Interpretation of the Sevenfold Plan as the Basic Philosophy of the New System

OBERLIN COLLEGE is engaged in the revision of its curriculum. The work is not finished; there is, indeed, a sense in which it ought never to be finished, but certain definite results have been reached which may be of interest.

Accepting the principle that a large part of the college experience should be devoted to a broadening general education, we have sought to work out a complete and logical plan for the direction of the choice of the studies to be undertaken with this end in view. It has not seemed to us enough that such studies should simply be courses taken at random outside the department of final specialization, or that they should be chosen in two or three other departments, selected with or without specific purpose. We have sought to develop a plan whereby each student should gain a measure of significant and ordered knowledge in each of the main fields of general human interest.

The development of this plan involved the difficult task of defining the main fields of general human interest in a fashion which should be right in itself and readily related to the curricular resources of the college. Long and careful study of the whole mass of curricular material in the light of the concept of evolution—a method of analysis suggested by Professor H. A. Wooster—led us to the discrimination of seven such fields of interest. The specific bases for the discrimination of these fields, and the fields themselves, are:

1. In a universe built up of like materials which undergo like changes under like conditions, upon a tiny changing planet.	*The Physical Sciences*
2. Many forms of life have evolved, including man.	*The Biological Sciences*
3. Man possesses a complex and highly integrated organization.	*Psychology*
4. Living in society with other men, he tries to understand group life, to adapt himself to it, and to mold it to his needs.	*The Social Sciences*
5. He has achieved effective forms of thought and of the communication of thought.	*Language* *Mathematics* *Logic*
6. He learns to enjoy the beautiful, and, so far as he can, to create it.	*Literature* *The Fine Arts* *Music*

7. He strives to understand the sum total of life, and to live with reference thereto.	*Philosophy* *Religion*

The term "the sciences of thought" might be used, as a matter of convenience, for the fourth field, and the term "the arts" for the fifth field. The discrimination of the physical sciences and the biological sciences as constituting two separate fields makes for a better and more modern balance than would be had through continuation of the concept of science as constituting a single field. Psychology is presented as a science *sui generis*, standing between the biological and the social sciences, and quite detached —like its older sister sciences—from its historic parent, philosophy. The grouping of language, mathematics, and logic as "forms of thought and of the communication of thought" corresponds, we believe, to an underlying unity, the recognition of which may prove fruitful in suggestion as to purposes and methods of instruction. Similarly, the grouping of literature with the fine arts and music is significant in its instructional implications. The acceptance of music as belonging in the same educational category with literature and the fine arts, unquestionably sound in theory, suggests a greater development of music as a college subject than it usually receives. The separation of language from literature is to me, at least, as a former professor of "language and literature," one of the most interesting features of the plan. In point of fact, the two subjects are so unlike in character that their traditional, and easily explicable, union has been productive of confusion in method and of maladjustment in teaching personnel. Many a man excellently qualified to teach a language has failed sadly in the interpretation of literature, and many a man finely sensitive to literary values has failed sadly as a language teacher. To carry out to its extreme logical consequences the separation which appears in our curricular plan would entail the discontinuance of the several traditional departments of language and literature, and the creation of a single large department of language and a single large department of literature. We have not seriously considered the taking of this radical step. I am inclined to think that its advantages might ultimately outweigh its obvious immediate difficulties. Philosophy and religion are grouped as being essentially disciplines of integration.

Review of the plan as a whole has seemed to us to confirm its validity. We do not believe that any man who seeks to be an intelligent and valuable citizen in this modern world can well ignore any one of the seven fields. Neither end of the series can get along without the other end. The physical and biological sciences lose direction if they slip out of relation to the sum total of life, and philosophy and religion stultify themselves in stagnant intellectual anachronism if they disregard the sweeping advance of the sciences. Every one of the seven fields, if it is really to yield happy experience and significant achievement, needs illumination and reinforcement from every one of the other fields.

The general idea, which was just stated, that each student should gain

some measure of significant and ordered knowledge in each of the main fields of general human interest means for us, translated into curricular terms, that each student should do some work within each of the seven fields which we have discriminated. That is the basic philosophy of our new curriculum; and that basic philosophy is more important and more interesting, I think, than the detailed regulations derived therefrom, which are inevitably determined, to a considerable extent, by local conditions.

It may be noted, however, that the only single course now to be required is English composition; that each student is required to take some work in each of the seven fields except psychology; that there is also established a category of "strongly recommended" work, in which psychology appears, together with additional work in the other fields; and that provision is made for three elective orientation courses: a year-course, without laboratory work, in the field of the physical sciences, a similar course in the field of the biological sciences, and a year-course in the field of philosophy and religion.

THE student's choice of courses, during the first two years, is to be under the direction of a board of advisers, of which the dean of the college is chairman. Each member of this board will be the individual adviser of a certain number of advisees.

During the last two years of college the student, as heretofore, will concentrate his work, for the most part, within a single department, though he will have a considerable amount of time for freely elected work outside that department. The work done in the major department is to be intensive and sequential. The very breadth of the experience to be gained from the sevenfold plan of general education seems to us to justify a relatively high degree of specialization in the latter part of the college course.

The new curriculum contains three provisions whereby the work of the last two years may be specially adapted to the needs of the individual student. The first, not new, provides that a student desiring a special major, that is, a major other than a departmental major, may submit plans for such a major to the committee on curriculum, and may, if those plans are approved, pursue such a major under the direction of that committee.

The other two provisions allow for the substitution of individual work for course work both within and without the major department. That department may at its discretion assign to major students special work of a creative or research character and may accept such work in lieu of a limited amount of the course work which would normally be taken in that department. A junior or senior student, with the approval of a committee on elective studies, may substitute a private course of reading for a limited amount of the course work which he would normally take outside his major department. Plans for such work must be submitted to the committee when approval is asked, and at the conclusion of the work credit will be given according as the committee may determine.

Changes at Chicago's Law School

By HARRY A. BIGELOW

Reorganizations within the Law School of the University of Chicago

DURING the last eighteen months there has been in progress at the Law School of the University of Chicago, a study into certain possibilities of change in the work of the Law School. A statement of the steps of this study may have value as furnishing specific data as to the way in which certain problems, more or less common to many law schools, have been dealt with in one particular case.

With the recognition a year and a half ago of the desirability of a consideration of various aspects of activities of the Law School, there was at the same time a unanimous concurrence by the faculty in the decision that the work for which the School was organized, namely, the giving of the best possible professional instruction, was still its primary function. The general belief, however, was that it was entirely possible not only to develop other functions, but that the development of them might well serve in turn to strengthen and improve professional training.

There was also an agreement upon the part of all members of the faculty that in the consideration of this problem of the new organization, function, and orientation of the Law School, it was essential that no steps should be taken in the way of changes except as they seemed clearly to be desirable.

For the purposes of this article it is sufficient to say that after consideration several aspects of the problem took fairly definite shape as being those with regard to which steps could be taken with what seemed to be a fair assurance of certainty that they would not be wasted.

The particular aspects of the whole general problem that finally manifested themselves as justifying immediate consideration were these: first, the possibility of a more exact selectivity in the composition of the student body; second, the development of closer co-operation with other departments of the University, both for the purpose of education of students and of faculty members, and for the purpose of carrying on activities, either alone or in conjunction with such other departments, which are broader than the instruction activities of the University, and serve to connect the Law School with those aspects of the life of the community where natural contacts might be found. The method adopted of dealing with each of the problems just outlined will be taken up in detail.

The special determination of the constitution of the student body may take place either before the students enter the School or after they are enrolled in the School, or at both times; a postentry selection is ordinarily made at the end of the academic year. The pre-entry selection process has been in this School, as it is in most schools, by group rather than by individuals. In other words, if a man had a certain number of years of college work, in substantially all cases three or four, he was admitted as a student in the Law School. That the existence of these requirements has a certain value in the elimination of undesirable students is not open to doubt. At the same time, in any entering class thus selected it may safely be said that there is a margin of 5 to 10 per cent at the bottom of the class composed of students that beyond question are not and never will be satisfactory legal material. Of course, the proportion dropped by the end of the first year is considerably larger than this, but this intermediate material shades off from the man who at the end of his first year pretty unquestionably should be dropped to the man who at the end of his first year should on the whole be allowed to stay on. With regard to this larger group, probably 20 to 30 per cent of the whole class, the line of demarcation is much less easily drawn. If, however, the lower 5 to 10 per cent of clearly undesirable material could be ascertained before entering the school a considerable saving would obviously be accomplished. While there is still a far from united opinion as to the value and accuracy of the intelligence tests and legal aptitude tests as a device for sifting out the incompetent student before his admission to the Law School, it was felt that the experience of Columbia and Yale in the employment of this device was sufficiently favorable to justify its tentative adoption. Consequently, beginning with the Fall Quarter, 1930, certain portions of the first-year students were required to take these tests before being allowed to enter the Law School. The determination of the admission of the student was based in part upon these tests, in part upon his academic record, in part upon other data derived from an extensive application blank which he is required to fill out, and in part upon a personal interview with a representative of the Law School.

THESE new requirements do not apply to students coming from the University of Chicago, and for geographical reasons it was thought injudicious to apply them to students residing more than one hundred miles from the Law School. The entire first-year class, other than those just described, who took the tests as a prerequisite to entering the school, was also required to take them on the opening day of school. This was done partly for statistical reasons. It gives us these data for the entire first-year class. Statistics will of course be kept as to the progress of students through the School, and, in the course of time, it is believed that an effective technique can be built up in the use of these preliminary examinations.

Such a postentry elimination of the unfit student will present two problems: first, the type of examination;

second, the minimum requirement for remaining in the School. In all law schools with whose methods the writer is familiar the grading of the student depends largely, if not entirely, upon the results of a single examination given at the end of the course. This result is sometimes affected by classroom work, by incidental papers or reports, or by preliminary examinations, but in all cases the mark derived from the final examination is at least marked by the preponderant one. With so much dependent upon this single examination it has to be read with great care. The maximum practicable length is four hours. The classic form of examination and that still used in most of the schools of the Association of American Law Schools is the so-called "essay" examination. In this a question consists of a statement of hypothetical facts raising a legal problem. The student is expected to give a decision and to discuss and weigh the arguments pro and con. An examination contains from eight to ten or twelve of such questions, the amount varying somewhat according to the form and complexity of the questions. The degree of thoroughness with which a course of say seventy-two hours can be covered depends partly upon the form of the question, partly upon the skill of the instructor. At best there is a certain element of chance in the scope of the questions. The amount of work involved in carefully reading the papers of a class of two hundred or more students needs no comment.

The desire to find a method of avoiding the difficulties of this situation led the faculty to a consideration of the merits of the essay type of examination, and the so-called "true-false" type of examination, in use in some law schools and in the undergraduate departments of some universities. The faculty was divided upon the merits of these two types of examination.

STATISTICS was thought to provide approach to the problem. There was of course a recognition of the fact that statistical methods have to be used with considerable care, that any conclusions drawn from statistics should be regarded as qualified only and subject to checking from other points of view, and that not all factors relevant to the situation could be made the subject of statistical examination. In pursuance of this plan a careful study has been made in an effort to help in a determination of the value for the purposes of the Law School of the true-false type of examination as compared with the essay type. For this purpose a statistical comparison was made by Mr. Eagleton of the Law School of the results obtained from true-false examinations in the same courses, and essay examinations in the same courses, and essay examinations in other courses. The reports of his investigation will in due course be made public by Mr. Eagleton, and it is not intended at this point to anticipate them. It is sufficient for present purposes to say that in the investigations made by him the conclusion that he arrived at was that the results obtained from the true-false examinations gave a more accurate index of the capacity of a law student than did the results obtained

from the individual examinations of the essay type. This conclusion was the same whether he took as the standard of comparison the composite result of all the examinations taken by the student at any given time or the result of the essay examinations alone, or the result of all the examinations taken by him during a given year.

Like many other schools this School has a passing mark for students and a higher average that must be obtained in order to graduate. If a student falls a certain distance short of these grades he is either suspended or dropped. The relation of these two grades to each other, and to the "dropping" point and the "suspending" point based partly on tradition, partly on more or less intuitive judgments, has also been made the subject of a statistical inquiry by Mr. Eagleton in which he has examined the grades of students for the last five years.

The examination conducted by Mr. Eagleton indicates clearly that there is a definite mark, determinable within a small variation, which a student must attain in his first year of work if he is to be able to carry through the work of the second and third years to a successful completion; and if he does not attain this mark he may be definitely excluded with the certainty that not once in 25 cases is any injustice being done. Here again it is unnecessary to go into detail. The grade has been definitely found for this School, and we are acting upon it in the elimination of first-year men.

It is believed that in both of the situations just considered results may very well vary with individual schools. It is certain that the standard of marking varies from one school to another. Examinations of marks given in this School showed a considerable variance of standards as between different members of our own Faculty. Such factors of course have to be considered in determining the minimum point at which the student should be kept in the School. It may also well be that the correlation between the results of the true-false type of examination and the essay type of examination will also vary in different schools. Consequently, it should be repeated that nothing more is claimed for the results just stated than that, so far as we have gone, they are correct for this institution.

CO-OPERATION between the Law School and other departments of the University and the enlargement of the activities of the Law School have numerous aspects. All the law schools of thirty years ago and many law schools at the present time confine themselves to strictly professional law training. For this purpose the material of the curriculum and the point of view that governs the exposition and treatment of the material contained in that curriculum are based fundamentally upon the decisions of the various courts in England and of this country, that is, the common law. This common law is modified in its use as a social tool by various factors. Among the more important of these are changes produced by statutes and the warping due to business or social or personal or political considerations, these latter as often as not unformulated and frequently disguised. Good law instruction has always

recognized these elements and sought to give them their proper value. The evaluation of these factors is naturally a difficult task; it is one that to a large degree has depended upon the instructor's own point of view or common sense or "hunch." There is coming to be a general recognition that even though legal doctrines may be self-contained and harmonious with legal doctrines, light upon their political or social or economic desirability can frequently be obtained if these rules of law are examined from the point of view of some disciplines other than the legal one. Similarly, while the checking and qualifications by "hunches" or common sense, of established legal doctrines and, perhaps of more importance, of legal doctrines that are still in the process of formation, have a certain pedagogical value, they are by no means as effective as would be a checking of such rules by statistical data in fields where the obtaining of such data is possible.

By the end of the second year in the Law School, sometimes somewhat earler than that, sometimes somewhat later, a certain number of students become weary of the study of law in the method in which they have been pursuing that study during their time in the Law School and desire some other method of attack or point of view, or an opportunity to deal with legal problems other than narrowly legal ones. Investigation along any of the lines just suggested furnishes first, an opportunity for the student of mature mind and possessing the necessary intellectual qualifications to do, at least in a limited way, work for which he is either entirely or in part responsible, and to correlate his purely legal information and discipline either with factual material or with material derived from some other branch of social science. The advantage to the instructor is obvious. It affords him the same opportunities that it does the student, coupled with the cumulative effect that comes from repeated efforts.

Another consideration that weighed with the faculty in its examination of the whole problem of research from a law-school point of view was the belief that the giving of professional training even in the broad sense was not necessarily the sole duty of a University Law School. It was felt that the obligation of utilizing the training and knowledge of the law faculty in making some contribution toward the solution of social problems might well be regarded as a part of its broader functions.

THESE factors of broader, advanced, individualized education for both student and instructor and of the application of the legal ability and training of the faculty to ends other than those of solely giving professional instruction were all of effect in leading the faculty to the determination to provide for the establishment of so-called "seminar courses" and to afford opportunities for extra-curricular activities on the part of those members of the faculty who desired to engage therein.

Developments from these motivations have taken various forms. One of the most pronounced is the increase in the number of graduate students working for the advanced degree J.S.D.

and, partly as a consequence thereof, and partly to give opportunities for the better and advanced undergraduate law students, a great increase in the number and variety of the seminar courses that are being offered.

These seminar courses are open only to a limited number of students. They meet informally at hours fixed by the instructor. The method of procedure in the various courses varies according to the subject-matter, the size of the group, and the ideas of the instructor. In some, individual problems are assigned to the various students and reports thereon made during the progress of the course. In others, some one topic is taken for examination by the entire group. The methods, of course, can be varied considerably. The courses are, roughly, of two different kinds. In some, the element of research consists in a detailed and careful scrutiny by the students of certain legal problems. Such, for example, are the seminars in trusts, corporate finance, administrative law, radio law, and one seminar in taxation. Other seminar courses take up one or more problems that are basically legal, but which are profitably open to examination from a non-legal point of view. Such are a seminar in evidence conducted jointly by the member of the law faculty giving the course in evidence and a member of the Department of Philosophy interested in the fundamental legal assumptions of evidence and in the psychological aspects of rules in evidence; a seminar in taxation conducted by the member of the law faculty giving the courses in constitutional law and taxation and a member of the Department of Economics who has specialized in the economic aspects of problems of taxation; and a seminar in psycho-analytic aspects of criminal law conducted by a member of the law faculty specializing in criminal law and an international psycho-analyst.

Investigative or research work that is not in its objective as immediately pedagogical as that just referred to is also going on. There are several varieties of this kind of work. There may be mentioned: a study in the problems, legal and economic, of the taxation of intangible personal property; a statistical investigation for the Wickersham commission of data on the procedure of the Federal Courts in criminal cases; a reorganization of the curriculum and methods of instruction in the police school of the city of Chicago. Other plans are on foot, but these will sufficiently illustrate the catholicity of the present efforts. What has been accomplished so far is of course but a beginning and is necessarily tentative. It seems at present to be successful. In the line of research, we wish to give all the encouragement and recognition that we can to individual initiative and to undertakings that seem promising, whether undertaken as part of the program of instruction, or as non-pedagogical investigation, or as both, for the two are far from being, in the last analysis, incomparable.

There are numerous other aspects of the organization of the Law School that will equally repay investigation: the constitution of the curriculum and methods of instruction are those that for the next year or two will particularly engage our attention.

Philekooi

By SIR JOHN ADAMS

Under a Greek Title Is Described the Place of the "Lover of Listening" in Education

AFTER Plato had made up his mind about the very severe course of training to which he would subject those who were to be the philosopher kings of his ideal state, he no doubt sat down to consider what qualities it would be necessary to demand from those who were to be considered worthy of this long and costly education. In the seventh book of the *Republic* he sets forth a list of seven essentials all of which are of interest to educators but one of which is of special importance at the present moment in view of the unrest, among students and teachers, with regard to the lecture system.

One of the seven essential qualities is that the chosen educand should be a good listener. Fortunately, Plato selects a name that is useful in dealing with our subject. Fortune continues with us, for not only does the *Republic* supply the term *philekoos,* but Providence put it into the heart of genial old Roger Ascham to supply in his *Scholemaster* an English interpretation of the term, which runs: "He that is glad to hear and learn of another. For otherwise he shall stick with great trouble, where he might go easily forward: and also catch hardly a very little by his own toil, when he might gather quickly a good deal, by another man's teaching." To be sure, the word means literally *a lover of listening,* and may be roughly translated *a good listener:* which is much more complimentary than would at first appear; for few there be that deserve this description. Modern social life would be a much happier affair if there were more *philekooi.* The line of Burns:

> "Man's inhumanity to man makes countless thousands mourn" has seldom been better justified than by the way in which people refuse to listen to one another.

But while there is a tragedy underlying the deficiency of *philekooi* in ordinary society, we must pass it by at present and attend to the professional application of the term. For we who are teachers at the higher level have a special interest in the supply of good listeners. It is one of our first demands from our pupils that they shall listen to us. This is true in all sorts of teaching, but is especially true in that form of teaching known as lecturing. It is less true today than it was half a century ago, that university students are professional listeners, but it is true enough today to justify us in classing our satisfactory students as *philekooi.*

Naturally, we cannot go the length of demanding that they be *lovers* of listening: we must be content if, as Ascham puts it, they are glad to hear and learn. In the case of a really good lecturer, listening is actually pleasurable. But, for ordinary purposes, it is held to be enough that the lecturer presents his matter clearly, throwing on the students the responsibility of assimilating it. What then is the students' grievance, and what do educational experts find to complain of in the method? When we look into the matter we find that what is at the bottom of the students' complaints is not really the method itself, but the inordinate size of the classes that the method makes possible. If we examine carefully, for example, the grumbles that rumble through the book, *The Students Speak Out*, published by the *New Republic*, we find that what they resent is the enormous denominator to the vulgar fraction of which "the professor's attention" is the numerator. When the professor's personality is divided by 1,200, there is not much left for the individual student's share.

CURIOUSLY enough, the very nature of this complaint emphasizes the essentially good quality on which the stability of the lecturing method rests. Its virtue is that it conveys knowledge by the most direct method and in the most human way. It is because of the close touch implied in combined seeing and hearing that the method commends itself within the limits that allow of this combination. Those curious but wholesome institutions known as the "folk high schools" of Denmark have all their teaching carried on by lecturing, because their founder, Bishop Nicolaj Grundtvig, set up for his schools the ideal of direct human intercourse. To this day in the sixty folk high schools, with their nine thousand pupils, all the teaching is done by lecture, and none of the students take any notes. This last is of the essence of the lecture method when carried on from the proper, that is, the human, standpoint.

From the teacher's point of view lecturing has certain obvious attractions. There is a straightforwardness about it that is soothing. The matter can be gathered together at ease, set down in proper order, and delivered with the minimum amount of effort. Lectures written at home and read in the class certainly reduce the professor's work to the minimum, if it is carried to the extreme of reading the same lectures unchanged from year to year. When it reaches the stage at which the lecture-manuscript attains literally "the sear and yellow leaf" the situation becomes scandalous, and can be no longer considered as a part of the problem of lecturing. It is beyond the pale.

Keeping within workable limits we are faced by the attitude of the students. Now here we come up against a temperamental difference. In England it has been said that the River Trent divides the country into two territories, in the northern of which students prefer to learn from textbooks, and in the southern of which they prefer to learn from lectures. Without making the distinction too rigid the generalization has enough truth in it to be interesting and per-

haps suggestive. Letting the Atlantic take the place of the Trent as the dividing boundary, it may be said that east of the ocean English-speaking people prefer to learn from textbooks, while west of it the lecture is preferred. There is at any rate this justification for the generalization, that the American people as a whole have developed the lecture-going habit much more than have the British. The cause of this difference is perhaps hard to find. The natural explanation, on the lines of what has gone before in this article, would be that the Americans are better "mixers" than the British, are more of the extrovert type, and are more inclined to acquire their knowledge from personal contact than by the solitary study of books.

SO FAR we have considered only the human elements, the speaker and the hearer. But as our old-fashioned grammar books used to remind us in season and out of season there is a third element, the subject of discourse. In the process of lecturing, the third person is supplied by the matter dealt with in the lecture, and this has an serious influence in determining the suitability of the method on any given occasion. There are certain subjects eminently suited for the method of lecturing, and others only moderately so. Such a subject as "How to read poetry" belongs to the first class. The late Sir Walter Raleigh in dealing with it had a passage in which he attacked the dogma, "Read as you would speak," and illustrated by quoting with outthrust chest a passage from the Old Testament dealing with Saul, David, and Abner, ending with the question, "Whose son is this?" No book could convey the impression he produced by his colloquial tone coupled with the thumb-jerk over his right shoulder. So a lecture on "The Pronunciation of Middle English" would have a better effect than a pamphlet on the same subject. On the other hand, pure mathematics may be quite well learned from books, with the aid of occasional verbal explanations.

If a big, broad differentiation of the subject-matter suitable to the teaching method and the lecturing is demanded, it may be supplied by setting over against each other didactic and inspirational material, the first including things to be communicated calmly and in detail, the latter involving a certain emotional tinge. It is not enough to say that the inspirational type demands stimulation of the class. The teacher of mathematics and physics must keep on stimulating all the time. Virtue is going out of him, as he keeps his pupils at it. But in the inspirational classwork there is an emotional outlet that is unique, and that every teacher recognizes as part of his experience in certain types of collective instruction. For this inspirational work the lecture will always remain the natural medium.

In inspirational work, however, it is comparatively easy for the pupils to listen. Things are made attractive for them. It is when didactic work claims their attention that the pupils have to brace themselves, and have to join with the instructor in the prayer that they may become genuine *philekooi*. It is here that I find it convenient to discard the popular classification of

the various types of attention, a classification that has been torn to tatters by the eternal quarreling among psychologists, and to fall back upon the twofold "attention with effort," and "attention without." Falling back on Latin we get to the word *nisus*, which means *effort*, and from this we may coin the two words *nisic* and *anisic*, with the result that we can say intelligibly that the aim of the teacher is to help the pupil to pass from nisic to anisic attention, on his way to the goal of being a genuine *philekoos*.

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Starred Scientists

By STEPHEN S. VISHER

"Which Is Which" among the Universities Which Are Training Starred Scientists

CATTELL made a study of the education of the one thousand scientists who were selected in 1903 as the most meritorious in their respective sciences and who were starred in the first edition of *American Men of Science* (1906). This study is reprinted in the appendix of the second edition (1910). The present article is a similar study of the younger scientists, those first starred in 1921 and in 1927, and a comparison with Cattell's findings for the earlier group.

Institutions which conferred Bachelor's degrees upon three or more of the 601 persons first starred in 1921 (Column 1) or in 1927 (Column 2) are listed in Table I.

When comparison is made with the data for those selected for starring in 1903, the majority of whom were graduated from college in the eighties, it is seen that most of the eastern universities graduated proportionately fewer of the younger starred men than of the older. For example, of the one thousand older men 106 received their Bachelor's degree from Harvard, but only 49 of the 610 younger men, a decline of about 25 per cent. Johns Hopkins declined from 27 men to 12, about 25 per cent. Institutions having similar declines are Columbia, Cornell, Wesleyan, and the College of the City of New York. Institutions with a decline of about 35 per cent were Dartmouth and Williams. Still greater declines occurred at Yale (50 per cent), Princeton (60 per cent), and Amherst (65 per cent). The only prominent eastern institutions to gain were Massachusetts Institute of Technology (10 per cent) and the University of Pennsylvania (35 per cent). Of the institutions west of the Hudson, Michigan declined about 40 per cent and Oberlin 65, but several gained: Iowa about 25 per cent, Nebraska 30 per cent, Wisconsin 45

TABLE I

INSTITUTIONS FROM WHICH PERSONS FIRST STARRED IN 1921 AND 1927 WERE GRADUATED

	Number First Starred in 1921	Number First Starred in 1927
(1)	(2)	(3)
Harvard	29	20
Chicago	9	11
California	13	7
Cornell	10	6
Massachusetts Tech.	9	7
Michigan	8	7
Yale	13	2
Pennsylvania	8	6
Columbia	11	4
Kansas	7	7
Indiana	11	2
Ohio	7	5
Wisconsin	3	9
Johns Hopkins	8	4
Minnesota	5	6
Stanford	5	6
Illinois	6	3
Nebraska	5	3
Wesleyan	6	2
Missouri	3	4
Princeton	2	4
Brown	3	2
Amherst	0	5
Colorado	3	2
New York College	3	2
Texas	3	1
Trinity	3	1
Williams	4	1
Wooster	4	1
Beloit	3	1
Dartmouth	1	3
Earlham	3	1
Iowa	3	1
Cincinnati	3	0
Kentucky	1	2
North Carolina	1	2
Syracuse	1	2
Valparaiso	1	2
Virginia	1	2
Western Reserve	1	2
West Virginia	1	2

per cent, and California about 65 per cent. Chicago, founded in 1892, contributed 16 times as large a proportion of the more recent groups of Bachelors as of the first (1903) group.

Not only have many of the western universities gained relatively, but a larger proportion of the younger starred men were graduated from institutions which contributed few or none of the older men. Thus while 23 prominent institutions listed by Cattell graduated a total of 492 of the 1,000, they graduated only 250 of the 601, a decline of practically 20 per cent. There has been no corresponding decline in total enrollment.

The ratio between enrollment and number of graduates among the starred scientists is of interest. For 17 prominent institutions, which together graduated a total of 54 per cent of the recipients of American Bachelor degrees starred in 1921 and 47 per cent of these starred in 1927, the range is from 17 undergraduate male students for each graduate later starred who were enrolled at Hopkins in 1901 to 205 to 1 at Princeton. Other institutions had the indicated number of such undergraduate men per graduate starred in 1921 or 1927:

Kansas	35
Chicago	45
Pennsylvania	50
Harvard	52
Indiana	56
California	67
Michigan	75
Columbia	75
Ohio	88
Minnesota	99
Illinois	100
Cornell	100
Iowa	113
Yale	128
Wisconsin	143

The relatively low ranking of Ohio, Minnesota, Illinois, Cornell, and Wisconsin is partly explained by their

large enrollments in agriculture. The relatively high rankings of Hopkins, Chicago, Harvard, and Pennsylvania are doubtless partly due to the fact that they attract many capable students from other institutions, who lack only a year or two of graduating. Nevertheless, these contrasts are strongly suggestive of the stimulating influence of enthusiastic science teachers.

In the graduate training of the 1,000 men of the 1903 selection, Hopkins was pre-eminent, having conferred the doctorate upon the largest number of the members of eight of the twelve chief sciences, tied for first in two, and tied for second in another. Among the 1921 and 1927 groups combined, however, Hopkins led only in pathology and anatomy, and tied with Harvard in physics. In chemistry, Hopkins was surpassed by Harvard and Chicago; in zoölogy it fell from first to fourth, being surpassed by Columbia, Harvard, and Chicago; in geology, it fell from first to sixth, being surpassed by Yale, Chicago, Columbia, California, and Cornell; in mathematics it fell from first to below sixth, being surpassed by Chicago, Harvard, Princeton, Cornell, and Columbia; in physiology, Hopkins was displaced from first place by Chicago; in psychology, it fell from first to below sixth, Columbia and Chicago leading.

Harvard led in respect to botany and anthropology in 1903. In the 1921 and 1927 groups combined, it led in chemistry, tied for first place in physics, and ranked second in mathematics.

Chicago had no clear first place in 1903, but in the advanced training of the younger men starred in 1921 or 1927 it led in mathematics and physiology, tied for first in botany and astronomy, and ranked second in geology, chemistry, psychology, and physics. As Chicago's "weighted scientific faculty strength" in 1906 to 1910 was little greater than that of Johns Hopkins and only about half that of Harvard, according to Cattell, this superior showing in respect to the number of students who have since been starred suggests that Cattell was correct when he considered younger eminent professors more valuable as teachers than older ones.

Another notable contrast between the 1903 and the groups of 1921 and of 1927 is the amount of training received in German universities. Of the earlier group, 136 of 1,000 received German doctorates, but of the smaller 1921 group, only 30, and of the 1927 group only 13, or less than one-fourth as large a proportion as in 1903, were graduated from German universities. In respect to graduate work which did not result in a doctorate, such a great decrease occurred that few of the younger groups studied in Germany, whereas approximately two-thirds of the 1903 group had done so.

Intellectual Pioneering

By DONALD A. LAIRD

Original Investigation, Intellectual Pioneering Tried in a Psychology Laboratory

THE royal adventure in education for teacher and student is unearthing some new knowledge. This statement has been arrived at inductively. College will differ essentially but little from high school under the projected reorganization of the curriculum unless this adventure is offered. Without this adventure incorporated as the heart of the last two years the essential functioning would be the same as in a secondary school; namely, learning what others have long ago discovered.

I do not like to have this called project work. Kindergarten children plant grains of wheat in moist earth and call watching them develop a project. Students in the guinea-pig college at Wisconsin study the cadaver of Greek civilization, and that is called a project. Neither is advancing the sum total of human knowledge which it seems work done in a college should accomplish. They are mere tricks to make the task of study more entertaining; and, possibly in the Wisconsin case, to demonstrate that life is not a sum total of various isolated subjects but life itself.

While it may be somewhat early in this brief discussion to quibble about terms, I think it may have a clarifying effect to continue in this mood for a few sentences. The term "research" might justly be used for this adventure, but that term might appear too pretentious on the outside, especially to our confrères in the universities, and, moreover, I doubt if research would be any more meaningful to a prospective student than project. Both research and project are under the handicap of being too easily misunderstood by possible matriculants, although either term might be logically used. Creative work, original investigation, intellectual pioneering are perhaps better phrases to convey the idea fairly and adequately.

For the time being, let us call it "the adventure." Its life values are in substituting for the habit of "I don't know" the more inquisitive habit of "Let's find out." It gives the student first-hand experience in methods of unearthing precious bits of new knowledge. It helps to make him scientific since science is not in knowing what anyone else can find in a book, but in having the attitude of pushing back the frontiers of ignorance. And I think it fosters honesty, while college can readily foster the opposite of this virtue.

This idea had birth in protest. I

had the most enjoyable time in my life, until the present year, when I was turned loose for three years in a well-equipped laboratory and told to "come over the top with some new information if you want your degree." The idea grew that the most fascinating thing in the world would be to teach experimental psychology. But when a book of rules had to be followed with beginning laboratory students, when their experiments were neatly mapped out for them by the author of the "cookbook" manual they were to follow, it became the most distasteful drudgery that can be imagined. What a depressing contrast with the new tantalizing pursuit of an unknown for three years!

The saddest aspect was that students seemed as depressed as their instructor. Students rebel in such a situation before the instructor does, I fear, although they endure the ordeal for the sacred credit-hours. That instructors do not rebel is witnessed by a recent conversation with the author of this cookbook laboratory manual when he told me with pride that it was being used in more than sixty colleges this year. I am glad that I know him well enough that I could tell him he should have been hung for ever having conceived the idea of stifling creative activities in psychology with such a manual. The manual itself is excellent enough, and not peculiar to psychology: I had my introduction to chemistry in similar fashion. It is the stifling idea back of all manuals that needs uprooting.

That the cookbook manual not only fails to cultivate an intellectually inquisitive attitude, but that it has some pernicious by-products was revealed by a brief undercover survey made by myself and some of the students in the methods of solving these artificial experimental problems in several laboratory courses. Introductory laboratory courses in physics, chemistry, and psychology were investigated. It was disclosed that more than half of the students consistently "faked" their experimental results. The manual read to mix solutions *A* and *B* and inquired if a flocculent precipitate was obtained. "I do not know what a flocculent precipitate is," the student confided to himself, "but if I can understand English that is apparently what I should get *if* I mixed the solutions; so why be a dumb-bell and mix them?"

Many instructors suspect this state of affairs and charge this scheme up to an inherent perverseness in student nature; but to be honest I think I would not be a dumb-bell myself unless I were a chronic skeptic and did not believe a thing that was told me in word or print. Other instructors think themselves craftier than the perverse student and use ingenious methods to trap him; but the student is wholly as ingenious. Last summer, for instance, I had the pleasure of being shown, by a student, a small hole in the back of an apparatus case which matched a hole through the partition against which it was placed. This was used by the instructor to spy through into the workroom to make certain that the students were conscientiously making their experiments and not exchanging results. But the students soon found out—how, goodness only knows, but leave that to

them!—with the result that the remainder of the year not one of them could be found in the sector of the room that could be surveyed through the lookout's eyepiece.

CONTRAST this attitude of faking testing results with the attitude that you are, for the first time in the history of the world, finding out something hitherto unknown. Whether the findings are going to revolutionize a field of thought or not, you know as sure as death and taxes that someone, somewhere, is going to check up on your findings when they are published. Four years ago it took salesmanship to get the students in the laboratory to believe this, but now we have proof for one of the articles published by the students as a result of that first year's work served as the starting point for verifying research at a mid-western university, and another precipitated (not flocculently, I hope) verifying research at a university in the far west. Fortunately, both of these agree with the students' work, and now they believe me that someone, somewhere, will have so little imagination that they cannot think of anything better to do than verify what you are doing.

I have mentioned laboratory work perhaps too much because it was out of that that the adventure idea developed. It is equally well adapted to subjects where brass instruments are not used, as is witnessed by this year's work of some of the history students.

As the plan has been developed and shaped in the psychological laboratory it takes form at present something like this: The elementary course has been developed each year with the end in view of better preparing students for this work; demonstrations of what would be given elsewhere as a second-year cookbook laboratory course have been used in connection with lectures. With the addition of two additional sections in the elementary course, it has been possible last year to get groups small enough in the second semester so that there is a chance for each student to take active part daily. After the middle of February beginning students in my two sections practically took charge of the daily meetings of the classes; they were assigned a topic with selected references, and prepared an outline for presenting this material to the class. Some of these reports took three consecutive periods to give. They were all of an excellent grade to date, some of them, in fact, rather humiliating the instructor in contrast. In the meanwhile, all the members of the two sections are reading the regular textbook and are given hour quizzes in it from time to time. In a sense this is a combination of a Chautauqua Home Reading Circle and a Redpath Lyceum, but it gives each student a chance to do literary research in the field, to demonstrate his ability to do semi-original work, and greatly increases the information we get into their minds in a semester. This is supplemented from time to time by students from the senior class who are working in the laboratory presenting the fruits of their genuinely original investigations and experiments to the beginning students so they will have a picture of what

the mysterious going-ons behind the partition are like. The outside reading and hour quizzes on it go on, in the meanwhile, like the wheels of destiny.

With the beginning of the junior year those still interested in psychology after this ordeal may go into the laboratory—provided they have taken Math. 26, Statistics. The first year they are battered from pillar to post, working with Seniors who have a definite investigation of their own which they hope to complete and publish. The Junior beginning in the laboratory does not spend his entire time with one Senior, but is shifted from one to another at definite periods—we have an automatic schedule for this. The result is that by the end of a semester the Junior has had some experience on all the investigations, and one month's experience on one; the latter is a morale device giving him the "feeling of possession." He has an investigation of his own, and when its findings are published his name will be mentioned. A few exceptional Juniors at the beginning of the second semester are taken out of the schedule of automatic rotation and given work of their own, or kept with one investigation the entire second semester in order that they may carry on with the work of this one, in case it cannot be completed within the year. The "social heritage," this training a Junior to carry on the work which a Senior often reluctantly leaves incompleted upon his graduation, is vital for the smooth running of such work in an undergraduate institution. It took us a year to discover this.

By this time it is probably apparent to the reader that the students are really doing the work, and work in this case includes teaching the Juniors as they rotate from one experiment to another. But for this feature the instructor could not handle one-sixth of the students in the laboratory, even under the "cookbook system," and the Seniors would not have the experience in training others that is an asset when they leave the academic corridors. This training experience has come in as a valuable asset in the case of those students who have taken industrial positions in psychological work.

FURTHER detail is given to the students by having one qualified serve as "consultant" in charting, another in metal-working when apparatus has to be built or repaired in the shop, another for statistical work, another on muscle tonus, and the like. If this were not done, a single decent experiment would require the entire time of the instructor, but with this plan he can function as general coordinator and the Devil's advocate.

The great danger in original investigations is that the instructor may have an overweening interest in one field and cultivate that entirely to the neglect of others. Since the entire field must be covered by the Junior that he be adequately oriented an unseemingly large variety of experiments must be kept in operation. This very dispersion of the work adds to its difficulty, but apparently is a necessary evil the instructor must endure in an undergraduate institution. The Junior keeps in touch with this variety as he is automatically shifted, but to provide for a similar variety on a

higher level for the Seniors a "Planning Committee" guides the destinies of each experiment. The experimenter in charge, the instructor, the student assistants, and one or two Seniors from unrelated experiments constitute this committee which varies from moment to moment as various problems arise in an experiment. We may have to call in the physics "shark," or ask him to get help from the physics department to help the experiment along. My favorite dodge is to get such a committee together, and then leave the room for them to solve their own difficulties.

A FURTHER device used to keep the forest visible to those working intensively on one experiment is to have a general meeting of the laboratory workers each Monday at which some Senior presents some phase of his work. In response to requests we now announce these "Works Councils," as we call them, to the Sophomores in elementary sections and a few of these attend the afternoon reports.

No student is too lacking in intelligence to be useful in his junior year. There are always pencils to be sharpened and other details on each experiment which will keep him busy, and, we hope, further his education. But there is a number which experience has shown are hopeless for the senior work. In the past we have foolishly let some of these go on, placing them with another experimenter who can look after them. This is a mistake, and I think harmful both to the good and the poor Senior.

The time for gathering much of the data varies: Rats are run through the maze after dark, they are fed at 10:15 in the morning; the sleep experiments sometimes take all night, sometimes just from 3:00 to 4:30 A.M. In consequence, we have had to relax the regular attendance schedule, and in its place have substituted a factory time clock. While this saves the bother of calling the roll it often requires practically twenty-four-hour service from the instructor. I imagine other departments would be more sane in this respect.

The following conclusions are based upon adventuring with Colgate students in this way for six years.

This scheme of "adventuring" is immensely stimulating for the instructor and immensely taxing. The students have to be gradually developed for the work; for it would be disastrous to plunge most of them into it abruptly at the beginning of their junior year. The junior year might well be made a "trial year" and some not allowed to take the creative work in their senior year.

Various supplementary activities on the part of the instructor and of the student are necessary to the success of this scheme. Attendance or time records have to be precisely kept, if for no other reason than to hold the student to a strict level and to save the instructor trouble with students inclined to be lax. Prescribed outside reading must be followed in both junior and senior years in addition to the experimental work, and examinations given on this. This outside reading should probably cover aspects of the work which are not given adequate emphasis in the laboratory

work. Written reports of progress should be submitted by the students at rather frequent intervals.

Here, too, a wide variety of work should be maintained to insure the students familiarity with the entire field. No student should be graduated unless he has done some original work which has been published or accepted for publication in a recognized journal in the field.

The system is no economy. In the psychological laboratory one instructor cannot adequately handle more than eight Seniors and sixteen Juniors under the system. Expenditures in the psychological laboratory last year were three times the budget, in addition to more than $3,300 in gifts not in cash. Equipment is more extensive for a "center of operations" including journals, conference space, small desks for each Senior to keep his records, and the like, should be provided for each department.

A student should have only one project in his senior year. At the present time a few instructors working on this basis are diluting the efforts of some of the students by two or more instructors having them work on different experiments. Instructors, also, will probably find one-fourth of their time spent in assistance on work in other departments. This should be considered when schedules are arranged for the faculty. Students should also be directed first to students in other branches for help, and when this fails, to instructors; this partly to save instructors' time, but more to develop the students.

Even under the present system at Colgate definite conference hours and places are desirable for staff members; under the proposed scheme they are imperative. The conference officers should be located adjacent to the laboratories, and good telephone communication is necessary. Since there will be a great deal of correspondence, and since the school will be judged somewhat by the appearance of the letters, there will be need for departmental or division "public stenographers." For familiarity with technical terms it will probably be wise to have these serve a rather limited field. Records of data will be of great value and should be protected in a fireproof safe in each branch. They should not be taken home or out of the safe overnight. A central storage vault would be needed in two or three years for the protection of dead data.

Care must be exercised in choosing the definite topics for study. They should appeal to the students as interesting and vital, and should be related logically to a coherent body of knowledge or plan and not merely the collection of isolated bits of knowledge. They should require use of questionnaires only as a last resort, else the college will make a widespread nuisance of itself, and students will be too busy filling blanks to do any work themselves. The topics should not be beyond the abilities of student adventurers, but should be vital enough to merit work by a Millikan or Thorndike. There should be a master committee to pass upon proposed adventures to prevent tactical or methodical blunders.

An Arraignment of Productivity

By PAUL V. SANGREN

An Arraignment of the Scholastic Productivity of the Teachers' Colleges of America

AN INVESTIGATION of the authorship of articles presented during the year 1928 in some of the leading journals dealing with the subject-matter taught and studied in teachers' colleges indicates that the 137 teacher-training colleges of the country are woefully deficient in making contributions to a solution of present-day educational and scholastic problems. The twenty-two journals examined covered the fields of education, mathematics, English, foreign languages, science, psychology, and social science.

Table I shows the number of pages contributed by various authors in ten leading educational journals during the year. The facts found here may be summarized as follows: In education, a field in which the teachers' college should make a great contribution because of its particular interest, measured by the number of pages written, 53 per cent of the material was presented by faculties of universities, 13 per cent by public-school administrators, 11 per cent by faculties of teachers' colleges, 10 per cent by classroom teachers, 6 per cent by miscellaneous individuals not directly connected with school or college instruction, 5 per cent by faculties of liberal-arts colleges, and 2 per cent by faculties of technical schools. In other words, in the field of education the members of university staffs were contributing fully five times as much to the solution of present-day problems as teachers' college faculties, and teachers' college faculties, in turn, contributed about as much as classroom teachers or school administrators. Of course, it would be absurd to ignore the comparative numbers of instructors in teachers' colleges and public-school teachers and administrators, but, in all probability, it would not be comfortable to compare the number of individuals engaged in teaching education in universities with the number engaged in dealing directly with the problems of education in the teachers' colleges.

Table II shows the number of pages contributed by various authors to twelve leading academic journals during the year 1928. From this table it is found that, in terms of the number of pages written, university faculties are contributing 61 per cent of the material, miscellaneous individuals 12 per cent, the liberal-arts colleges 9 per cent, classroom teachers 9 per cent, faculties of technical schools 4 per cent, teachers' colleges

3 per cent, and public-school administrators 2 per cent. In other words, from this point of view, it looks as though university faculties are contributing about twenty times as much as the faculty members of teachers' colleges, while arts-college faculties are contributing about four times as much, classroom teachers about three times as much, and only public-school administrators contribute less to a solution of the problems involved in the various fields of academic study than the faculties of teachers' colleges. One must admit the limitations imposed on this study by the comparative numbers involved, but in all probability it would be absurd to say that university faculties should be expected to contribute twenty times as much to fields of academic study as faculties of teachers' colleges, or that classroom teachers should contribute nearly three times as much. Although this sort of study has decided limitations, the findings do show quite conclusively that the faculties of teachers' colleges, as a whole, are doing much less toward the building up of human knowledge and toward establishing a high scholastic standing than might well be expected of them.

TABLE I

NUMBER OF PAGES CONTRIBUTED BY VARIOUS AUTHORS IN THE TEN LEADING EDUCATIONAL JOURNALS

JOURNAL	SOURCE OF AUTHORSHIP						
	University	Technical Schools	Teachers' Colleges	Public-School Administrators	Classroom Teachers	Liberal-Arts Colleges	Miscellaneous
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
School and Society	233	68	24	39	10	107	19
Journal of Educational Method	111	2	27	90	53	6	.....
Journal of Educational Research	372	.....	31	81	38	4	18
Teachers College Record	304	.....	23	19	.....	.....	11
Educational Administration and Supervision	166	.....	203	53	48	22	63
Childhood Education	70	.....	58	82	58	.....	26
Elementary School Journal	125	.....	18	108	31	.....	27
School Review	163	9	59	25	195	20	15
Journal of Educational Psychology	550	.....	.....	.....	.....	17	9
Nations Schools	115	.....	8	67	7	26	73
Total	2,209	79	451	564	440	202	261
Percentage	53	2	11	13	10	5	6

Haggerty, also, has found that, although every teachers' college employs individuals on its faculty who teach psychology, out of 236 colleges which may be ranked as distinctly teachers' colleges only 24 employ instructors of psychology who are members or associates in the American

Psychological Association, an association which is recognized as having in its membership the scholars in the fields of psychology.[1] Only a few members of the American Educational Research Association, the recognized association for scholars in the field of educational research, are employed by teachers' colleges. A hasty preliminary study of those listed in *American Men of Science* shows that not more than one in every thirty-five are on the faculties of teachers' colleges and that probably not over thirty teachers' colleges in the United States are represented. The few facts presented here represent but a preliminary view of the problem, and the author hopes to make a fairly exhaustive study to determine more definitely what the scholastic standing of the teachers' college is in American education.

It does seem, however, that such facts as these only give additional evidence that the teachers' college has not yet been able to take itself off the level of a normal-training school. For some time the period for training teachers was admittedly short, and it seemed that the teacher-training institutions were primarily institutions of the vocational sort tacked upon the high school or, even, upon the

TABLE II

NUMBER OF PAGES CONTRIBUTED BY VARIOUS AUTHORS IN TWELVE LEADING ACADEMIC JOURNALS DURING 1928

JOURNAL	SOURCE OF AUTHORSHIP						
	University	Technical Schools	Teachers' Colleges	Public-School Administrators	Classroom Teachers	Liberal-Arts Colleges	Miscellaneous
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mathematics Teacher	166	20	20	8	123	19	77
School Science and Mathematics	181	17	17	.....	102	75	6
Elementary English Review	48	.....	34	18	50	6	78
Quarterly Journal of Speech	303	.....	.....	.....	11	42	34
Modern Language Journal	216	.....	6	.....	60	41	.....
Classical Journal	261	.....	10	38	27	96	27
Journal of Geology	371	41	.....	.....	66	73	120
Botanical Gazette	453	130	74	.....	.....	59	67
American Journal of Psychology	465	.....	.....	.....	.....	32	.....
Psychological Review	354	6	.....	.....	.....	.....	130
Journal of Political Economy	487	.....	.....	.....	.....	49	115
Historical Outlook	103	3	10	25	55	20	10
Total	3,408	217	171	89	494	512	664
Percentage	61	4	3	2	9	9	12

[1] "Who Teaches Psychology?" *Journal of Higher Education* I (February, 1930), p. 98.

elementary school. Historically, the teachers' college may be considered a comparatively young institution, and it may well be said that it has not outlived the tradition that its principal task is to train quickly a group of workers in some such specific way as one might train individuals to operate a switchboard or to repair automobiles. It is just this conception, that the teachers' college is a training school, that has led to so much criticism of the teachers' colleges by the faculties of arts colleges and of universities. In fact, it is the author's observation that the outstanding criticism of all teachers' colleges by our fellow-workers in the fields of higher education is that the members of the faculties of teachers' colleges do not present those fine evidences of scholarship which are held important on the arts-college and university faculties. Admittedly, this criticism is not always justified, but there is, at least, a sufficient amount of truth in it so that there is need for a thorough self-examination to determine to what extent the instructors in teachers' colleges are measuring up to the regular standards of scholarship demanded of individuals in other types of higher institutions.

That productive scholarship should have an important place in a teachers' college does not remain a question in the mind of the author. He feels that every college teacher has two outstanding tasks: to impart knowledge or to place the student in a situation such that he will gain knowledge and to contribute to knowledge. He is convinced that no member of a college faculty has reached the fullest measure of success or fulfilled the complete intention of his job until he has both stimulated others to gain human knowledge and stimulated himself to discover new knowledge. In the opinion of the author, the teachers' college of the present day is in a special class so far as professional higher education is concerned; it is in a class by itself largely by virtue of what it has not done. The medical school, the law school, and every other professional school of higher education attempt to prepare their students to be successful in the various fields into which they will go by stimulating them to acquire that knowledge and those skills which are essential. But more than that, the faculties of all professional schools of higher learning take it upon themselves to make direct contributions to the solution of the problems of their particular fields.

OFTEN the teachers' colleges have been content to take whatever new knowledge has been discovered by university faculties or faculties of other colleges and to impart this knowledge to the students in the best way possible, but have made little effort, of their own, to make similar contributions. If the teachers' college is to continue its present growth and to attain and retain a standing equivalent to the professional schools of other sorts now connected with or independent from the various colleges and universities, it will be necessary for the members of the faculties of teachers' colleges themselves to study their various scholastic problems first hand and to be less content with a mere acceptance of the work of others.

The following suggestions might well direct the teachers' college toward a realization of standards for which the author has argued. Some of these suggestions may not be immediately practicable, but none of them is impossible and unreasonable.

In the first place and above all, it is decidedly essential that a scholarly attitude should be cultivated by all members of the faculty. They should be overflowing with some of the old-time scholastic spirit and enthusiasm which make them spend much more time in the consideration of problems of scholarship and much less time in general college gossip. This is not meant as a criticism of the present attitude, but is meant to emphasize that, after all, only a scholarly attitude will result in the production of those contributions which indicate that an individual is attempting to be a real student of the field in which he purports to be a specialist.

The administrative staff should, in the author's opinion, encourage and, perhaps, demand products of research on the part of a considerable portion of the members of the faculty. Such encouragement might consist in promotions of a financial sort and in responsibility based upon productive scholarship, as well as upon contributions to the institution in the way of excellent teaching or the solution of the many problems of institutional welfare.

One may hope for the time when the teaching-load of members of the teachers' college faculty will be reduced to a maximum no greater than that found in standard colleges and universities. The general importance of teachers' colleges as professional institutions should easily justify the reduction of the present maximum load from sixteen to twelve hours. While this, alone, will by no means assure additional research and scholarship on the part of the members of the faculty, it will undoubtedly result in providing more time for the various members to pursue scholastic studies in line with their particular interests. If clerical assistance for many members of the faculty and modest appropriations for research be added to this reduction in the teaching-load, both the teachers' college and the teaching profession will benefit manifold.

TEACHERS' colleges would do well to affiliate with certain of the public schools for experimental purposes. Many more members of the faculty should act as free educational consultants for public-school systems, and many more members should avail themselves of existing opportunities to carry on studies in the public schools dealing with the content of the curriculums and the problems of administration, supervision, and teaching.

Sooner or later, a good teachers' college should establish an experimental school in connection with the training school. This experimental school should be established primarily for demonstration and experimental purposes. It should be possible for members of the faculty there to carry on studies of an experimental and research nature, studies which are difficult under the present system of practice teaching and observation.

Many other suggestions might be included which, if observed, would help to solve the problem at hand. No long and itemized list of steps which may be taken, however, will correct the deficiency since the remedy lies largely in the attitude of the teachers' college. Will the teachers' college accept this sort of challenge, or will it present in self-defenses and self-justifications reasons why it should not be expected to establish scholastic standards equivalent to those found in other professional colleges. If the great mass of teachers is to be prepared in the teachers' colleges, one may expect a fairly complete and satisfactory professionalization of teaching only when the teachers' colleges of America attain a scholastic standing commensurate with their importance.

· *With the* · Technicians ·

Testing Inferences

In the *Educational Research Bulletin* for November 19, 1930, R. W. Tyler, of the Bureau of Educational Research, describes a list which he has devised in collaboration with W. M. Barrows, D. F. Miller, and J. W. Price, of the Department of Zoölogy, Ohio State University. The purpose of this test is the measurement of the student's ability to draw inferences from presented facts. Drawing inferences is defined by Mr. Tyler as "the ability to propose reasonable inferences" which serve to interpret the related facts obtained from observation, reading, or listening. In any such test it is essential that the student be presented with the necessary related facts which he is asked to interpret. That this test may not be a measure of memory, these related facts must be new to the student. If he previously has heard these facts interpreted or has read an interpretation, his response is likely to represent his memory of the interpretation made by someone else, which of course would not give a measure of his own ability to draw inferences from facts.

For an elementary class, the most productive source of new related zoological facts is the current research work in this field. A brief description of a recent experiment and its results presents material which is typical of the data which the student is expected to learn to interpret. Since the facts are new, successful performance is not a matter of mere memory. Hence, a series of such descriptions was prepared for use as test items. An illustration of one of the simpler items is:

> In autumn, when the pond is cold, frogs hibernate by burrowing into the bottom of the pond. In the spring a frog put into a tank of water goes to the bottom and attempts to burrow into the bottom of the tank.

The ability to propose his own inferences without suggestion was the attribute desired of the student. It was hoped, however, that this ability might be highly correlated with the ability to select the best inference from a series of alternatives, which could easily be measured objectively by a multiple-response test. To learn whether the two abilities were highly correlated, a group of sixty-six students was given two tests on the same day. The first test consisted of a series of items preceded by the following directions:

> Suppose in each of the exercises which follow that the facts given were observed or known to be true. Write in the space below the facts, the one inference which seems to you most reasonable in attempting to interpret the facts. The sample illustrates this procedure.
>
> SAMPLE
>
> *Facts.*—Starch when treated with iodine solution gives a blue color. When saliva is mixed with starch and left for a time the

mixture no longer turns iodine solution blue.

Inference.—Saliva produces a change in starch.

Remember to write down the inference which seems most reasonable from the facts given.

These papers were then taken up and the students were given the same items in a multiple-response form. The following directions were used in this second form:

In each of the exercises below several facts are given. After the facts are suggested a number of inferences. Supposing these facts are true, select the inference which seems to you most reasonable and place a check mark in front of it as in the following sample.

SAMPLE

Starch when treated with iodine solution gives a blue color. When saliva is mixed with the starch and left for a time the mixture no longer turns iodine solution blue.

a. Saliva turns starch to sugar
b. Saliva turns iodine blue
√c. Saliva produces a change in starch
d. The color of saliva destroys the blue color
e. Saliva has no effect on grape sugar

Remember to check the inference which seems most reasonable from the facts given.

Mr. Tyler also describes the steps made in standardizing this test.

The Ladies

Through the joint labors of the National Federation of Business and Professional Women's Clubs and the Bureau of Business Research of the University of Michigan, a program of research in the occupational histories of business women in the United States has been completed, and the results of the study give a picture of the typical wage-earning woman, her education, her salary, and resources. Financial and executive responsibility was assumed by the University, while the Federation distributed the questionnaires to its members. Of the number issued, 14,858, or 31.8 per cent, were returned; 14,073 were usable.

This monograph by Margaret Elliott and Grace E. Manson, *Earnings of Women in Business and the Professions* (Michigan Business Studies, Volume III, No. 1), emphasizes the present occupational status of the group and earnings in various occupations and types of work. Later monographs will study promotions based on full occupational histories of the group, occupational interests, and special vocational groups. The questionnaire, from which all the data used in this series of studies are obtained, covered education, marital status, dependency, mode of living, financial status, and ocupational history.

The women who make up the group of those who were reached by the questionnaire are all on the higher occupational levels of non-manual work, which, of course, excludes domestic and factory workers. Since all replies were anonymous, there was no reason for deliberate falsification. The geographical distribution of the replies was found to be in direct proportion to the geographical distribution of the members of the National Federation, though, compared to employed women throughout the coun-

try, it was over-weighted for the east and west North Central States, and correspondingly under-weighted for New England, New Jersey, and Pennsylvania. More than half of those who answered the questionnaire live in small towns or medium-sized communities, as against one-sixth of women in the whole country.

This is a mature group, with a median age of 37.7 years, against a median age, according to the 1920 census, of 29.1 years. The median years of employment is 13.7, while 70 per cent of the women work 40 to 55 hours a week. The median is 45.6 hours. Fifty per cent have attended or been graduated from secondary schools, while 25 per cent have attended or been graduated from colleges or universities. Single women number 71.5 per cent; 15.2 per cent are married; 7.5 per cent are widowed; and 5.8 per cent are divorced or separated from their husbands. Three-fourths of the reporting group, as against two-thirds of all women of the country who are engaged in non-manual work, are engaged in clerical work, teaching, or sales and publicity.

The median earnings are $1,548, while the average earnings are $1,662. This does not include any sort of supplementary income. Women who are independently engaged in business and the professions are at a salary level of $503 above the median of those in salaried positions. It seems apparent from the Michigan study that women may anticipate a work span of thirty years during which earnings will increase, ten years on a constant level, and after that a decrease. Salaries seem to increase with the size of the city of residence. Married women earn less than those in any of the other groups, but women without dependents have lower earnings than those with dependents.

Median earnings of the total group increase with added years of general education, but not until the college graduate is reached is there appreciable difference. There is only a $66 difference between the median earnings of those who attended or were graduated from secondary schools, and those who attended but were not graduated from college. Those who possess an A.B. or advanced academic degree exceed the non-graduates by $346. The earnings advantage given by education increases with age, and a decline in earning power comes much later for the educated woman. Women with A.B. degrees reach their high median between the ages of fifty-five and sixty, while those with higher degrees reach their salary high point between forty and fifty. Two-thirds of those who have an A.B. or higher degree are in teaching or clerical work, the two lowest median groups at the college level. The authors forcefully voice the query, Why do not college women enter the highly paid fields of work?

College graduates with business-college training earn $56 less than the total group of college graduates. Business-college training seems to be of more advantage to women in small towns than in larger communities. Women who have held only one job have consistently lower earnings. Eleven per cent of the women have an income from supplementary evening or special work, with a median of

$202. Thirty-six per cent have a $156 median income from savings. Assuming that the interest drawn is at 5 per cent, average savings, exclusive of insurance, would seem to be $3,000 which is not large for a group whose median age is over thirty-seven years. An inheritance income of $203 is enjoyed by approximately the same number as have supplementary earnings. Supplementary incomes, in general, serve only to increase the existing inequalities.

A relation which is as unintentional as it is complete may be found between this study and one of Emilie J. Hutchinson, *Women and the Ph.D.*, published by the North Carolina College for Women. The material in this volume is based on 1,025 replies to a questionnaire sent to 1,575 women who held a Ph.D. in 1924. The author concludes that scholarship is endangered by the increasing numbers who seek the doctorate, thus tending to minimize its value, and that there should be two higher degrees of Ph.D. ranking, one for those who are making advanced preparation for teaching, and the other for research work. She notes the aid that the doctorate may be to married women who wish to resume a professional career after leaving the field of work during the early years of their children's lives.

Junior Colleges

T. C. Holy, assistant director of the Bureau of Educational Research, Ohio State University, has recently completed a mimeographed publication entitled, "A Study of the Public Junior College with Particular Reference to Its Establishment in Ohio."

On April 26, 1928, the Attorney-General of Ohio ruled "that a college may not be established and maintained in connection with the public school system of the state, unless the same be done by the state legislature." Following this opinion an enabling act was submitted to the Legislature in 1929, the chief criterion of which was a minimum property valuation of $25,000,000. This bill, however, was not enacted, so in 1930 a further study was undertaken in order that data might be available for the use of the 1931 Legislature in case the bill was again proposed.

This study embodies an analysis of 266 high schools belonging to the North Central Association, and 44 public junior colleges widely distributed. It was found, for example, that 16.9 per cent of the high-school enrollment in cities having colleges was enrolled in the first two years of higher institutions as compared with 10.9 per cent in those cities without colleges. It was found that junior colleges are now being operated in twenty-four cities, eleven of which require specific legislation. It was found that the group of school districts with taxable valuation of from $25,000,000 to $30,000,000 had a median high-school roster of 663.

In the proposed statue which is a part of the study there are two criteria, a tax valuation of not less than $25,000,000 and an average daily attendance of not less than six hundred in Grades IX to XII. The matter of standards, regulations, and inspection is left to the State Depart-

ment of Education. This proposed statute has been submitted to fourteen specialists in the junior-college field for their reactions. The most common objection raised to the statute by these experts is that the assessed valuation is too high.

Three other studies of the junior college have recently come to our attention. Walter Crosby Eells in the *California Junior College Mental-Educational Survey* gives the results of Thurstone mental tests and Iowa achievement tests given to more than eleven hundred students in 47 different junior colleges. These colleges were divided into the district and the high-school types which are organized by the California law, private junior colleges, and a special group consisting of the single state junior college in California in connection with the California Polytechnic School and four public junior colleges in other states.

The results of the Thurstone test were compared with those obtained from 30,653 Freshmen in 112 four-year colleges in the United States. The achievement was compared with that of the Freshmen at University of Iowa. In ability, the California junior-college Freshmen were found to be superior to Freshmen in 32 public colleges and universities included in the 112, but inferior to those in private institutions. On achievement, these Freshmen are only slightly inferior to the Freshmen of the University of Iowa with whom comparisons are made.

Sixteen of the 36 junior colleges of Texas which are classified as municipal junior colleges furnish the material for the report, *Texas Municipal Junior Colleges,* which has been published by the State Department of Education. General information is given on the standards and legal requirements of municipal junior colleges, admission and graduation requirements, instructors, student body, course of study, physical properties, finances, and extra-curricular activities. No conclusions are drawn. The Texas law provides that no school district may establish a junior college unless it has an assessed property valuation of at least $12,000,000 and an average daily attendance of not fewer than four hundred students in the last four years of the classified high school of high schools within the district. Such institutions charge tuition at a rate ranging from $75 to $250 per year. Since there is no subsidy, the tuition constitutes the chief source of income. The authors, J. R. Reed and S. M. N. Marrs, have collected and tabulated a large amount of information which should be of considerable value in appraising the municipal junior colleges of Texas.

Wyatt W. Hale, Phi Delta Kappa Fellow, writing for the October issue of the *Phi Delta Kappan,* educational fraternity magazine, reports the results of a study of the comparative holding power of junior colleges and four-year colleges:

1. Standard colleges have a significantly greater holding power than do junior colleges.
2. The difference in holding power (reliability measured by the ***PE*** of averages) is a real one, and could not be accounted for on the basis of mere chance factors

operating in the choice of institutions studied.

3. Of the junior colleges studied, there is a larger number of instances where the holding power is below average than above for coeducational institutions; in the institutions for men only, or for women only, the opposite prevails.
4. Of the standard colleges, excluding Mt. Holyoke and Vassar, there is practically an even division of institutions above and below the average in holding power for each type of institution. When Mt. Holyoke and Vassar are included, however, the results are more nearly the same as in junior colleges.
5. Of the junior colleges, the privately endowed or proprietary ones are evenly divided below and above the group average in holding power, while in denominational institutions, more are above average than below. In the public junior colleges, a larger number is below than above the group averages in holding power.
6. In the standard colleges a larger number of the privately endowed or proprietary institutions is above average in holding power than is below average. The holding power of the public and denominational institutions is below rather than above average.

Beliefs of the Collegian

In direct contradiction to the current and prevalent beliefs that the college generation holds radical and generally unconventional points of view are the results of a social-belief test recently administered to 98 incoming Freshmen and reported in *School and Society* (December 20, 1930), by George J. Dudycha, of Ripon College. Students were asked to score twenty-five statements by one of five marks indicating implicit belief, inclination to belief, noncommittal, inclination to doubt, and absolute disbelief.

The propositions receiving the greatest numbers of positive scores were: (1) The home is a necessary social institution; (2) The institution of marriage is necessary to society; (3) The church is necessary to society. Ninety-nine per cent of the students believed in the necessity of the home, 95 per cent in marriage, and 93 per cent in the church as an institution. There is a marked gap in the sequence of beliefs following these.

·The·Reporter·

IMMEDIATELY after the sixteenth annual meeting of the Association of American Colleges a year ago, some forty college presidents and representatives of denominational boards of education met at Washington to organize the Liberal Arts College Movement of which one hundred forty-eight colleges are now members. The objectives of the organization are chiefly to publicize the need for liberal-arts education and to set forth collectively the needs of the member colleges.

In November, the first issue of the official organ, the *Liberal Arts College Bulletin*, appeared under the direction of the Committee of Fifteen, the Executive Committee comprising J. W. R. Maguire, W. J. McGlothlin, Rees E. Tulloss, A. N. Ward, *Chairman*, and George L. Omwake, *Secretary*.

The following quotation, which aptly summarizes the movement, is taken from the first issue of the *Liberal Arts College Bulletin:*

> The college of liberal arts faces perils, not only in the small and poorly endowed institutions, but in the large institutions as well. That cultural education should not perish from the land is sufficient reason that every liberal arts college in the United States should be included in the Liberal Arts College Movement.
>
> The Liberal Arts College Movement proposes to consider the relation of the liberal arts colleges to higher education in the United States at the present time, and to set forth collectively their needs in order that they may function more efficiently; and to formulate the ways and means whereby an appeal may be made to the American public for the financial resources necessary if the liberal arts colleges are to function efficiently and adequately.

A STUDY of the 1930 *Who's Who* indicates that of the 28,805 persons listed 16,433 hold Bachelor's degrees. It is interesting to observe that 12,742, or over 40 per cent of the people considered to be America's leaders, have had only a secondary education or less.

A NEW personnel office has been created at the University of Chicago, with the title of Dean of Students and University Examiner. This office is to be held by George Alan Works, former dean of the University of Chicago Library School and more recently president of the Connecticut Agricultural College.

Mr. Works' position will be unique, combining the functions of educator and personnel director with the task of correlating all the University's relations with students. Admissions, educational and vocational guidance, the development of a program of student recreational and social life, and the administration of the comprehensive examinations necessary for the new organization of the University of Chicago are included in his program.

THE Yale University athletic authorities have this past month ruled that no one connected with Yale athletics may hereafter write newspaper articles or speak over the radio.

THE Executive Committee of the Association of American Colleges at its last meeting agreed to initiate a study of "the smaller college" and its place in the American scheme of higher education. A total of eighty-four colleges are co-operating in this study which will cover the following areas: educational policy; organization and administration; personnel; the "raw material" (student supply) and the "product" (alumni); instructional facilities and techniques; physical plant; financial situation and needs; and such miscellaneous areas as student life, religious life, personnel guidance, extra-curricular activities, enrollment trends, and special activities. Brief detailed schedules have been prepared indicating the information desired in each area.

EARLY during the month of December, the McGregor Hall of Chemistry at Colgate University was dedicated. This building was erected at a cost of $500,000, from a bequest of Miss Evelyn Colgate and a gift from her father, James C. Colgate.

THE Association of American Colleges has established an Architectural Advisory Service for the purpose of showing plans and photographs of all new construction at colleges belonging to the organization, and the tabulation of all new construction of various buildings as to size and cost. The service, which is gratuitously rendered to member colleges, includes:

1. Personal consultation on individual problems in the Association office on regularly designated conference days by previous arrangement.
2. Review of preliminary or final plans of local architects either in conference or through correspondence.
3. Suggestion of comparable buildings or architectural plans on file in the office.
4. Reference to literature pertaining to building plans or architectural problems. For the personal conferences, it is very helpful if an outline of the problem to be considered is submitted in advance of the conference.

THE National Association of State Universities announces the election of George H. Denny, president of the University of Alabama, as President of the Association for the ensuing year.

THE Council of Church Boards of Education will hold its annual meeting at Indianapolis at the time of the meeting of the Association of American Colleges. The educational associations of various denominational groups will meet then also.

THE *New York Times* reports the reopening of the discussion as to whether the University of Wisconsin should accept endowments from private foundations. President Frank and the Board of Regents recently granted permission to a group of University scientists to apply for a fund of $300,000 from the General Education Board for an investigation in

chemistry. Meanwhile, Governor LaFollette has announced that the position, opposing the securing of funds by the University from foundations, which he took five years ago remains unchanged.

BOTH the *Yale News*, the daily undergraduate newspaper, and the *Yale Alumni Weekly* are editorializing in favor of a short football schedule for Yale. Both publications point out that Yale must choose between its present plan of playing a long schedule or stepping out of intercollegiate national competition and arranging football schedules on a different basis. They further declare that Yale cannot wisely afford to set itself up in competition with other institutions which, in the opinion of many Yale students and alumni, are exploiting football beyond amateur boundaries.

THE thirty-sixth annual meeting of the North Central Association of Colleges and Secondary Schools will be held at the Hotel Stevens in Chicago, March 17–20, 1931. The program will include addresses by President Chase, of the University of Illinois; President Frasier, of the Colorado State Teachers College, and President Hutchins, of the University of Chicago.

THE University of Chicago through the University of Chicago Press is sponsoring a new journal called *The Library Quarterly*, edited by William M. Randall, with six associate editors representing Sweden, England, Germany, France, Italy, and the United States. The new journal, the sixteenth learned journal published by the University of Chicago Press, has been established with the assistance of the Carnegie Corporation to fill a need for a journal of investigation and discussion in the field of library science.

A FIELD course in science and science education in Germany for the summer of 1931 has been announced by Teachers College, Columbia University. The itinerary includes a trip up the Rhine, walking tours in the Black Forest, the Bavarian Alps, and Saxon-Switzerland, and visits to several German cities, among them Düsseldorf, Cologne, Munich, Dresden, Berlin, and Hamburg. The tour is under the direction of S. R. Powers, professor of natural sciences at Teachers College. The cost of the entire trip will be $550 from New York to New York. University credit will be given for successful completion of the course.

GROUND was broken, late in December, for the new International House at the University of Chicago. It is the third of its kind in the United States. The structure with its furnishings will exceed $2,000,000 in cost, and is being financed by a gift from John D. Rockefeller, Jr. The purpose of International House will be the promotion of friendship and understanding among the students from foreign countries who are studying in the Chicago area. There are more than one thousand foreign students now attending educational institutions in Chicago and its vicinity.

A COMMITTEE of the Progressive Education Association has begun an investigation of the college-entrance requirements in relation to secondary schools. Members of the committee are: W. Carson Ryan, Burton P. Fowler, Harold Rugg, Flora J. Cooke, Josephine Gleason, E. M. Sipple, Jesse Newlon, John A. Lester, Robert Leigh, Ann Shumaker, and Wilford M. Aikin, *Chairman.* Dean Raymond Walters, of Swarthmore College, and Mr. Ben Wood, of Columbia, also, are members of the committee.

STUDENTS of the University of Michigan who offend against the student automobile regulations are to be penalized by two extra weeks of classroom instruction. Observers look with wonder, and perhaps amusement, at the system which punishes the student by the giving of an extra two weeks of individual instruction. Members of the Michigan faculty apparently regard the instruction they give in the same light as do some students, a punishment to be inflicted, rather than an opportunity to be sought.

IN CALLING attention to the work of the educational publication, *Self Help for College Students,* Commissioner Cooper has recently announced that during the year 1928, students in 611 American colleges earned about $33,000,000 toward their expenses.

A FACULTY committee of Oberlin College has recently submitted a report on the bases of promotion of faculty members. The report includes an interesting analysis of the problems involved, and administrators of other institutions who are concerned with this problem may secure a copy of it by writing to W. D. Cairns, chairman.

STUDENTS at the Montana State College recently went on a strike, in the absence of the President, because of a ruling of the Dean of Women requiring all women students to be in the dormitories by 11:00 P.M. The students submitted seven proposals to the faculty, the first requiring that the student senate pass all social rules before they became effective. When the faculty declined to consider the seven points the undergraduate body struck.

THE American Field Service Fellowships for French Universities has announced that a limited number of fellowships for advanced study in France will be awarded for the year 1931–32. Each will carry a stipend of $1,400, and will be tenable for one year, with the possibility of renewal for a second year if circumstances are favorable.

THE tri-weekly newspaper of the University of Virginia has recently issued a platform of seventeen desirable changes toward the improvement of the University. One of these recommendations is that "the honor system be redeemed by taking from its jurisdiction the sobriety of students at dances, and other responsibilities which are without its scope and which have an unhealthy influence on a once perfect system."

THE New York State Society of Newspaper Editors has had a special committee working upon the place of newspaper training in collegiate schools of journalism. The committee recently submitted its report, the burden of which read: "The newspaper is not offering sufficient financial rewards to warrant a young man spending the time and money for a four-year course of preparation." The ideal training which the committee suggests is that journalism courses be but two years long, of which one year should be devoted to actual technical training and the other to liberal-arts subjects.

ENTRANCE requirements for the University of California have been changed from graduation from an accredited high school to these points: evidence of high-school graduation; a record of fifteen high-school units, one-third of which shall be in prescribed subjects; evidence of superior attainment in at least ten units.

SOME of the changes among the presidents of institutions of higher education which have been announced during the fall and early winter months are:

James M. Smith, formerly Dean of the College of Education of the Southwestern Louisiana Institute, has been appointed President of the Louisiana State University to succeed Thomas W. Atkinson.

Frank D. McElroy goes to the presidency of Mankato Teachers College in Minnesota, from the faculty of the Ohio State University, where he recently secured his Doctor's degree.

High Point College, a Methodist institution in North Carolina, recently elected a new president in the person of Gideon Ireland Humphreys.

To succeed Charles Oliver Gray, Rev. Charles A. Anderson will assume the presidency of Tusculum College, Greenville, Tennessee.

Rev. Arthur Howe has been elected to the presidency of Hampton Institute, coming from an assistant professorship in Citizenship at Dartmouth College. He will succeed George P. Phoenix, deceased.

George A. Steele has been named the President of Maryland College for Women, Lutherville.

John C. Dawson, President, Howard College, Birmingham, Alabama, has resigned to become head of the Romance Language Department at the University of Alabama. Mr. Dawson's resignation becomes effective in February.

Mervin Gordon Neale, dean of the School of Education of the University of Missouri, was appointed President of the University of Idaho on September 8 to succeed Frederick J. Kelly, who has resigned to join the faculty of the University of Chicago.

Brooklyn College, which opens in the near future, will, it is announced, combine the Brooklyn branches of the College of the City of New York and Hunter College. William A. Boylan has been appointed President, and Adelbert G. Fradenburgh as Dean.

Gifts

Funds from Mr. Alexander H. Rice, of Newport, Rhode Island, to Harvard University for the founding of a School of Geography.

A grant of $10,000 in cash has been awarded by the Carnegie Corporation to aid the University of Oregon in its program of art. The fund, given without restriction, will be used for research work of all

kinds in the field of fine arts, literature, and music.

President McConaughy has announced that Wesleyan University will receive more than $1,000,000, the largest single gift in its history, through a bequest in the will of the late Charles Land Denison. Mr. Denison specified that one-half of his residuary estate should go to Wesleyan, subject to the life use of Mrs. Denison, for the endowment of such college purposes as the trustees might determine.

The University of Notre Dame has received $200,000 to found a College of Foreign and Domestic Commerce, given by Edward N. Hurley, of Chicago.

Something over $100,000 to Connecticut College for Women for the maintenance of a professorship to be known as the Lucretia L. Allen fund.

The University of Pennsylvania has been given $20,000 by A. S. W. Rosenbach, which is for the establishment of an honorary fellowship in bibliography.

On February first the first municipal college for negroes will be opened in Louisville, Kentucky. The bond issue for the college was approved four years ago providing for a separate institution under the administrative direction, however, of the Board of Trustees of the University of Louisville.

A total of $486,518 has been received as gifts by Teachers College, Columbia University, during the past year.

Washington University has received an unsolicited gift of $850,000 from Joseph B. Givens, retired St. Louis contractor, to erect and maintain a building for the School of Architecture, and to establish a scholarship fund for deserving students.

An anonymous gift of $30,000 was made by one of the members of the Board of Trustees to the general endowment fund of Hamline University.

President Henry J. Burgstahler announces that Cornell College will receive $145,000 for endowment through the gift of $100,000 from an anonymous donor, and the addition to this sum of $45,000 by the General Education Board of the Rockefeller Foundation.

The Chicago Tribune Company has given $125,000 to Northwestern University to be used for the support of the Medill School of Journalism. This is to be paid over a period of ten years at the rate of $12,500 a year.

Princeton University has received $400,000 from the estate of Mr. Frank Hartley, of New York, as an endowment fund for scholarships.

Beaver College, Jenkintown, Pennsylvania, is to receive $1,000,000 from the will of Mr. William Curran. Mr. Curran died fifty years ago, leaving his estate as a "foundation for the education of females in or adjacent to Philadelphia." Litigation brought about by his will has just been settled in favor of Beaver College. It was interesting to note that the original amount in 1880 was $50,000, but the accumulation of principal and income now amounts to $1,000,000.

Two gifts totaling $155,000 have been received by the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis, of the University of Pennsylvania. The sum is being contributed by two foundations as follows: the Rockefeller Foundation is giving $80,000 over a period of two years and the Carnegie Foundation is giving $75,000 over a period of three years.

A grant of $10,000 has been made by the Carnegie Corporation, New York, to the museum at the University of Pennsylvania and the Philadelphia Commercial Museum. It is to be shared equally by the two, and has been made available in order to assist them in developing an important program of extension education.

·Editorial·Comments·

THIS past week the Office of Education of the Department of the Interior has announced that a group of experts are to select and publish a list of the ten or a dozen most important books that have appeared on higher education during 1930. The plan has obvious merit. Administrators, who, alas, have all too little time to read, may with such a list before them invest their few available hours for large dividends, and who knows what new and excellent educational devices may result.

Yet perhaps of even more significance than the books of 1930 are the achievements of 1930. As one reviews higher education from the vantage point of an editorial desk over which passes an incredible tonnage of manuscripts, news releases, periodicals, and correspondence, inevitably one comes to formulate judgments and set up discriminations between this achievement in one university and that in another. In reviewing 1930 in such fashion, one finds oneself repeatedly returning for another appraisal of the most interesting reorganization taking place at the University of Chicago. Certainly, if educators the country over were asked to vote on achievements for 1930 as they are being asked to vote on the books for 1930, the plan of reorganization at the University of Chicago would be placed prominently among the most significant.

This would be true chiefly because the University of Chicago has designed a new technique for carrying out the educational implications of the insistent psychological principle of individual differences. Since the investigators of intelligence demonstrated two decades ago that student ability ranges from near-stupidity to near-genius, here and there an enterprising educator has attempted to design machinery to provide for these varying degrees of student differences. Ten years or so ago Swarthmore initiated its honors course, a program permitting the better student to be relieved of ordinary class routines that he might, spurred on by his own initiative, explore areas forever closed to the ordinary undergraduates. About the same time Iowa and other institutions developed the scheme of sectioning classes by ability, and more recently Harvard built up its comprehensive examinations based upon its tutorial plan. These have been the outstanding experiments to date in the attempts to design administrative methods allowing for individual differences and providing for the concomitant principle of flexibility of program according to ability.

Important, however, as these several advances have been, the Chicago plan seems likely to be even more important still. Building upon the experiences of these pioneers, Chicago has been able to go the whole way

and completely reorganize its entire instructional program upon a philosophy of flexibility. At Swarthmore a comparable plan is possible for but about twenty per cent of the junior and senior classes; at Harvard the tutorial plans depend upon departmental acquiescence, and an appreciable portion of the college still does not operate under it. At Iowa sectioning by ability is similarly a departmental affair. Only at Chicago does the principle of flexibility thread itself through the entire educational pattern. Instead of segregating a portion of the student body and assigning an elastic program, the University of Chicago is setting up as its foremost tenet the notion that every student should work at his own pace, be it fast or slow. Thus the very able student may graduate from the Junior College of the University of Chicago in a year or less, and the poorly endowed student, who despite his limitations insists upon a college education, may take three or four years for his junior-college work.

About seventy years ago Charles W. Eliot introduced a very similar principle of variability into American higher education, the principle of voluntary election of courses. In the place of the rigidly prescribed curriculum of those years he advocated and succeeded in achieving an elastic curriculum differing for each student according to his tastes and ambitions. It is safe to say that no innovation of the nineteenth century has had more influence upon the present-day higher education than the doctrine of electives, and it may well be that the Chicago brand of flexibility will have a similarly large influence. Certainly, it is true that as the new Harvard plan of the early sixties freed students—all students—from a subject-matter restriction, the Chicago plan of these early thirties frees students—all students—from a time restriction. And to permit the student to work at his own pace is as logical as it is to let him "study what he most affects."

WHAT Eliot began Hutchins and Boucher are carrying on to more remote frontiers; and, because this is so, no experiment in higher education today is likely to be more productive of influence in all directions than this being conducted at Chicago. Everyone in higher education must inevitably watch it closely and continuously the next few years, not only because of its characteristic of flexibility, but also because the program taken in its entirety appears very much like a challenge for the four-year college. Under the new plan the University of Chicago has no college other than its Junior College. The institution is now composed of a junior college, a graduate school divided into four divisions, and a half-dozen professional schools.

Writing in the *New Republic* just five years ago, Mr. Judd predicted the dissolution of the four-year college and the development of junior colleges and professional and graduate schools just in the way that it is now happening at the University of Chicago. What this development will mean for other educational institutions it is difficult to say. It is patent at this time, however, that the Univer-

sity of Chicago has lent its prestige to the junior-college movement in a fashion that inevitably must have a tremendous influence upon the organization of colleges and universities in every part of the country.

Whether Chicago will push its present organization to its logical conclusion remains to be seen. Since the completion of junior-college work is made the occasion for a thorough inventory of each student's ability before he is permitted to go on to graduate study, it must almost inevitably develop that there will be a movement at Chicago in favor of granting the Bachelor's degree then and not two years later. At present, such a possibility will more than likely strike the Chicago faculty as impossible and undesirable, but that the demand will grow cannot seriously be doubted. Likewise, there will almost certainly be a noticeably increasing pressure from both the junior-college and the graduate divisions upon the professional schools, urging their acceptance of graduates of junior colleges as professional-school students without further general education. At present, at least one of the Chicago professional schools is so organized, and it may be that the Law School will consider reducing its requirement from three to two years and that even Rush may in time be willing to accept the junior-college graduate provided he be of more than ordinary ability. This is the logical line of development for the Chicago plan to take.

IF, IN the course of the next decade, the plan veers in the direction here proposed many four-year liberal colleges will either be forced back into the junior-college area or will need to justify their extra two years of work by producing a graduate very much superior to the junior-college product nurtured on a flexible program such as that at Chicago. Meanwhile, a group of liberal-arts colleges organizes for strength and financial solidarity under the name of the Liberal Arts College Movement. Can such an enterprise be successful? Successful or unsuccessful the movement is likely to be a factor in an inevitable realignment of the national organization of higher education. Chicago lends its prestige in one direction yet refrains from going all the way with its junior college. The Liberal Arts College Movement set up a program of publicity and expansion in an opposed direction. While the problem is unraveling during the next decade the student of higher education must inevitably keep actively in touch with developments both at the University of Chicago and in the new Liberal Arts College Movement.

W. H. C.

..Reviews..

Teaching the Teacher

THE TRAINING OF COLLEGE TEACHERS, *William S. Gray, Editor*. Chicago: University Press, 1930. viii+242 pp. $2.00.

Gray's *The Training of College Teachers* compiles the views of fifteen specialists on seventeen phases of higher education. Richardson, professor of chemistry at Dartmouth interprets the "Deficiencies in Current College Training," and offers a rather unique proposal, that of collecting a college faculty from the professors in colleges, large and small, who have achieved in their respective colleges reputations as great teachers, but who through lack of the professional advertising which research and publishing bring are hardly known outside their colleges.

Suzzallo in another chapter discusses the "Academic and Professional Elements in the Training of Prospective College Teachers." As his final word, Suzzallo says that it will be far easier to provide professional training than to reconstruct the academic phases of a college teacher's training, which latter involves the reconstruction of both secondary and college education. Returning to "Desirable Types of Graduate Training," Richardson recommends the creation of an institution designed primarily for training college teachers. Selective as to admission, equivalent in length of time to the doctorate, with materially increased stress upon the study of things to be taught together with decreasing emphasis on the publication of research, or even the requirement of "positive results" is this phase of graduate study. Laing in chapter five outlines the "Training of Teachers in Relation to the Newer Educational Program," Suzzallo in a succeeding chapter plans the "Reorganization of Postgraduate Work for Prospective College Teachers," Gray surveys current methods in training prospective college teachers, Judd discusses the "Nature of the General Professional Training a College Teacher Needs" and similarly eight other specialists in succeeding chapters discuss eight other phases of college teaching.

One of the great merits of the book is that it presents the views of fifteen nationally known students of the various phases of college teaching. Practically, it makes the Chicago Institute of Higher Education of 1930 available for all who are interested. The weakness of such a volume lies in numerous duplications and perhaps a lack of sequence in outline. The book is a valuable contribution and one which every real student of the theory of college teaching, every administrator of college teachers, and every college teacher should own.

SHELTON PHELPS
George Peabody College for Teachers

Whither?

HIGHER EDUCATION FACES THE FUTURE, *by Paul A. Schilpp*. New York: Horace Liveright, 1930. xvi+408 pp. $3.00.

A series of twenty unrelated essays, dealing mostly with the general criticism of higher education, make up this volume. No attempt was made by the editor to secure discussions which would cover the field of higher education. The interest in the book, therefore, is largely just the interest that one has in the philosophy of education held by the several authors. Most of the essays are very stimulating, but the net impression of reading one after another is that there

is but little agreement among the suggestions for meeting the situations adversely criticized.

While it is difficult to single out for comment the few which the limited space will permit, the following seem the most significant. Sir John Adams, Professor of Education at the University of London, makes a plea for the integration of the materials of instruction around some center which is real to the learner. Professor William C. Bagley, of Teachers College, Columbia University, states with unusual forcefulness his demand for a "new discipline that will enable us to compete successfully with the new freedom." President E. M. Hopkins, of Dartmouth, while emphasizing the need for a better intellectual training, recognizes the colleges' "responsibility to cultivate the feelings as well as the minds of its membership." Professor William McDougall, of Duke University, who was formerly Fellow in Oxford and Cambridge Universities, makes a more frank plea for the differentiation of function between endowed universities and state-supported universities than is usually set out in print. The following quotation summarizes his point of view, "While the latter [state universities] must continue to meet as best they may the popular demand for higher education on a vast scale, it is for the endowed institutions to aim primarily and solely at quality, at securing a limited number of highly selected students and providing them, regardless of expense, with the conditions most conducive to those results which are of greatest value."

Part Four of the collection contains five interesting essays by men who are in charge of experiments now going on in the organization of higher education. These are Professor Alexander Meiklejohn, of the Experimental College of the University of Wisconsin; President Hamilton Holt, of Rollins College; President A. Lawrence Lowell, of Harvard; President Norman F. Coleman, of Reed College; and President Robert Devore Leigh, of the newly founded Bennington College.

Probably no essay in the group is more stimulating than the one by Dorothy Canfield Fisher entitled "New Leaders Needed." She makes a plea for the more complete adjustment of education to the problems which people confront today, and emphasizes especially the need of preparation for leisure. The concluding essay of the symposium is by Ray Lyman Wilbur, President of Stanford University and Secretary of the Interior. He makes the point that education should be adjusted to the individual students with especial reference to the philosophy that "we advance most by developing our strong points."

F. J. KELLY
University of Chicago

The College

HIGHER EDUCATION IN AMERICA, *Raymond A. Kent, Editor.* Boston: Ginn and Company, 1930. x+689 pp. $4.00.

This volume is a welcome and material contribution to a rapidly growing literature dealing with problems in higher education. Interest in this phase of education has grown apace in recent years, with the result that a number of good books have appeared. This volume is well organized and, in the opinion of the reviewer, is one of the most useful of the books in this field.

Part I is devoted to the divisions of instruction in higher education, and includes such subjects as: the junior college, the college of liberal arts, the school of agriculture, the school of law, and the school of engineering. Units, the omission of which may be noted, are home economics, pharmacy, forestry, and journalism.

The organization and administration of higher education constitutes the second part. Among the topics discussed are: selection of students, student records and accounting, the board of control, and the college or

university budget. An omission in this section that cannot be overlooked is the library. The last twenty-five years have witnessed such a marked growth in the importance of the library in higher education as to warrant treatment in a work of this character.

The volume is the result of a composite authorship, a different person being responsible for each chapter. In spite of this, there is relatively little overlapping in the subjects treated, although naturally there is considerable variation in the character of treatment accorded the several topics that constitute chapters. The names of such leaders as Pound, Gies, Marshall, Tufts, Wilkins, Judd, Elliott, Charters, and Kelly are to be found among those responsible for chapters. The introduction was prepared by President Coffman.

The volume is suited for use with university classes interested in the study of the administration of higher education. It should also prove a valuable addition to the library of persons engaged in the administration of nearly all phases of higher education.

GEORGE A. WORKS
University of Chicago

Problems and Practices

COLLEGE AND UNIVERSITY ADMINISTRATION, by E. E. Lindsay and E. O. Holland. New York: Macmillan Company, 1930. xv+666 pp. $4.00.

Treatises on this subject are few. The literature, already voluminous, consists largely of brief articles in professional periodicals and convention proceedings. Among these contributions are now many that deserve the name of studies. The time had come for a comprehensive treatment of the problems and practices of university administration which should be based on this widely scattered and episodic material. The authors, in attempting such treatment, have revealed something of the extent and complexity of the subject, and have assembled in one place much useful information—not all of it impeccably accurate.

After a brief historical introduction, the book deals in a single chapter with the constitution, powers, and obligations of the governing board, and with certain administrative officers and their functions. There is a section on academic administration covering institutional organization and instructional administration. There is a section on personnel administration dealing with the administration of the faculty and the student body. A final section discusses what the authors believe to be current trends. The appendices contain a number of useful blank forms. The bibliographies at the ends of several chapters are valuable.

But a visitor from Mars, or even from Europe, would gain from this volume a very misleading idea of American higher education. If he had read Mr. Flexner's[1] book first, his worst forebodings would be confirmed at the hands of these patriotic expositors. The symbol of the university in America, he would conclude, is really the Ford plant, complete with field agents and national advertising. The picture is so detailed that even the faith of a native is shaken, until he identifies the peculiar provincial bias of the authors, and makes a shrewd guess as to the limitations of their experience.

The bias is twofold. It is in favor of the state institution, particularly the land-grant college; and it is in favor of the mechanistic conception of university administration. American higher education, the authors seem to say, is typified by a state-supported public institution of swelling enrollment; estopped by political pressures from closing its doors to any high-school graduate however stupid or indolent; relying for resources to enable it to swell some more, first on sturdy athletic teams and the thoughtless repetition of its name by ex-

[1] Flexner, Abraham. *Universities, American, English, German.* New York: Oxford University Press, 1930.

cited unintelligent sport-fans, and second on the scarcely more subtle influence of a far-flung army of extension agents; regimenting the intellectual life of its students in stereotyped classes under the direction of a staff, nicely graded as regards costliness, and loaded with discreet perception of the relative strengths of the backs of old and young camels; regimenting the moral, social, and religious life of its students under cohorts of house mothers, deans of men and women, graduate managers, and Y.M.C.A. secretaries; doing a little graduate work (an excursion into the empyrean which is defended by arguments both hard-headed and sentimental); promoting with brave gestures research in practical problems principally through the Federally fostered experiment stations, but otherwise looking askance at research as a diversion of the professor's time and strength from teaching. In short, there is suggested the university of the Rotarian's dream, "service" and all.

To keep this monstrosity going, there are mechanisms tried and true—they are described with a wealth of detail. There are standardized officers with standardized duties—and the officers are named and their duties enumerated. There are devices, devices for keeping professors in their place, for preventing contractors from making scenes, for ordering and purchasing and assigning floor space—and they have a mystic perfection.

In all this there is no recognition of certain powerful controlling forces external to the university, nor of the significance of movements within the university that are transforming it more rapidly than any other institution, not excepting the high school, has been transformed. For instance, the influence of the great professional associations, of the associations of professional schools, and of other standardizing agencies, including the stronger state departments of education, appears to have escaped the authors' attention. The tutorial and honors systems are set forth merely as teaching devices in a few non-typical institutions, rather than as symptoms of a nation-wide effort to regenerate the intellectual life of undergraduates.

Professional education—except in the professions of engineering and agriculture, the traditional sphere of the land-grant college—is passed over almost as if it did not exist, and the bearing on university ideals and objectives of the recent extraordinary reforms in certain fields of professional education, notably medical education, is ignored. Nowhere is there reference to the overshadowing issues of higher education: the new integrations and new syntheses demanded by the rapid expansion of the field of knowledge, the content and method and appropriate location of general education, the boundaries of specialism, the determination of the proper rôle of the university as a preparatory agency, the changing function of the university in an educational system that is in the process of reorganization. Even the question of the basis on which university members shall be selected and retained, a matter on which the future position of the university in American life depends, is cavalierly disposed of by noting two opposing practices, and dubbing one "aristocratic" and the other "democratic," and God is, of course, on the side of the strongest battalions. These are problems of statesmanship with which university "administrators," absorbed in police duties, and in the manipulation of check lists and blank forms, have no concern.

What the book presents is surely a worm's-eye view of university administration. Perhaps there are institutions of the kind the authors seem to regard as typical, in which the revolutionary movements that have higher education in their grip are not perceptible, and in which administration consists of a neatly co-ordinated set of clerical and regulatory operations. But if this is what administration is to be generally in American universities, Heaven help the

universities—and America! The prayer is not superfluous, because the book is partly designed to help prospective administrators prepare for their future responsibilities.

Actually, the authors have overlooked the distinction between administration and executive routine. For the latter, mechanical devices are helpful—and the book is a useful compendium of some of these. Even within their proper sphere, however, these devices must be employed with discretion. Indeed, one of the perennial problems of administration is the problem of determining when and how far they should be used, and to what extent they may be trusted. For administration is polarized toward people, not toward devices. In essence it is the direction of human effort, the co-ordination of the efforts of many human beings toward important ends, the continual adjustment of human beings and human institutions to an unstable environment. It is compounded of judgments and decisions and the taking of positions; the most variable and unchartable of human activities. It may be aided by mechanisms, but, if it ever gives up to mechanisms, it has failed.

The literature of educational administration concerns itself chiefly with the administration of public schools. Unfortunately, much of it makes the same mistake of emphasis as does this volume. There is a certain excuse in the fact that the aspects of organization and the activities of management which can be summarized and tabulated and reduced to rule of thumb procedures are these subordinate aspects and activities which influence and assist, but surely do not control, the grand strategy of administration. It is perhaps not surprising that the authors of this pioneer treatise in the higher educational field should have followed the model that has dominated the writing on educational administration for some twenty years. Nevertheless, it is to be hoped that the new literature of higher educational administration, which may be expected shortly, will be more successful in avoiding these errors of perspective.

S. P. CAPEN
University of Buffalo

Educational Opinions

THOMAS JEFFERSON AND EDUCATION IN A REPUBLIC, *Charles Flinn Arrowood, editor*. New York: McGraw-Hill Book Company, 1930. xii+184 pp. $1.75.

Of the twelve volumes of "McGraw-Hill Education Classics" announced for publication, this is the second to come from the press. In Part I, "Jefferson's Services to Education in America," the editor summarizes Jefferson's career, his educational activities, and his theory of education. Part II, "Thomas Jefferson on Education," comprises reprints of much of his writing on education which is contained in bills, reports, and letters. The arrangement adopted by the editor involves a certain amount of repetition and of separation of related material. The last chapter is entitled "Jefferson on the Education of Women," but his letter to his daughter, Martha, which "furnishes a pretty definite idea of what Jefferson believed in the matter of the proper education of a young woman of wealth and position," is given in Chapter I, and the last chapter contains no reference to this material.

If the arrangement of material is not all that could be desired, neither is the selection. The three bills which Jefferson in 1779 drew up for the Virginia Assembly embodied "a comprehensive plan for a system of public education," and "contained the germs of all of Jefferson's later thinking on education," but not one is reprinted. For the complete text of these bills one would have to consult other requests which are cited. On the other hand, the "Bill for Establishing Religious Freedom" which was introduced at the same time is reprinted.

R. H. ECKELBERRY
Ohio State University

In the Lay Magazines

"A Little Exam," by Thomas Beer, *Scribner's*, January, 1931.

A devastating verdict as to knowledge and intellectuality of the Young is brought by Mr. Beer acting as foreman of the jury. Irritated at intolerant charges of dullness and mediocrity in intellectual qualities, made by the Young against the Middle-Age, the author and two fellow-conspirators, an engineer and a lawyer, promoted a test to disclose how much of a background of genuine knowledge might be claimed by the 24 critical junior members of this seaside house party. A lot of money was represented among the defendants in the case, trips abroad, education at Harvard, Yale, Dartmouth, Columbia, Michigan, Notre Dame, Smith, and Bryn Mawr, Phi Beta Kappa keys, a group ranging in age from seventeen years to twenty-five years. Here are the questions and the number of correct answers. The key to the exam is not supplied, but mayhap many readers will estimate their standing by a mere reading; for the unfamiliarity of many of the subjects will preclude answering the questions either wrongly or rightly.

1. Who is George Santayana? 5 correct answers.
2. What is the normal period of gestation in human beings? 8 correct answers.
3. Describe a painting by Pablo Picasso. 4 correct answers.
4. What is meant by Baroque? 5 correct answers.
5. Who is A. S. Eddington? 6 correct answers.
6. Who said, "Truth alone is the daughter of Time"? No correct answer.
7. What is chromium? 4 correct answers.
8. What eunuch successfully conducted a great military campaign? 1 correct answer.
9. Who were the Piccolomini? 1 correct answer.
10. Name the authors of
    a. Sticks and Stones? 5 correct answers.
    b. In Our Time? 5 correct answers.
    c. L'Arlesienne? 1 correct answer.
    d. The Siege of London? 2 correct answers.
    e. Rien Que La Terre? 2 correct answers.
    f. Der Zauberberg? 3 correct answers.
    g. The Enormous Room? 5 correct answers.
    h. The Blythedale Romance? 5 correct answers.
    i. The Open Boat? 3 correct answers.
    j. Soldier's Pay? 3 correct answers.
    k. Virgin Spain? 5 correct answers.
    l. Die Untergang des Abendlandes? 3 correct answers.
    m. Folkways? 3 correct answers.
11. What is meant in finance by "Gresham's Law?" 2 correct answers.
12. Who discovered the circulation of the blood? 3 correct answers.
13. Translate: "Nescire autem quid antea quam natus sis acciderit, id est semper esse puerum." 2 correct answers.
14. For what is Abu Simbel noted? 1 correct answer.
15. Who is President of France? 7 correct answers.
16. What is the oldest golf club in the United States? 2 correct answers.
17. Name the authors of "What Price Glory?" 4 correct answers.
18. Who was Josiah Willard Gibbs? 2 correct answers.
19. What is known as the Newlands Act and what did it authorize? 2 correct answers.
20. Name two kings of France who were taken prisoner in battle. 2 correct answers.
21. Who was Tillmann Riemenschneider? 2 correct answers.
22. What celebrated modern novel ends—"walked back to the hotel in the rain?" 3 correct answers.
23. Who was Tycho Brahe? 2 correct answers.
24. Who was Sir Harry Vane? 2 correct answers.
25. List three compositions of Brahms. 4 correct answers.
26. List two compositions of Stravinsky. 5 correct answers.
27. Who was James G. Blaine? 6 correct answers.
28. List two books by each of the following American authors:
    a. Edmund Wilson. 5 correct answers.
    b. Van Wyck Brooks. 7 correct answers.
    c. Conrad Aiken. 5 correct answers.
    d. Bertrand Russell.* 5 correct answers.
    e. Matthew Josephson. 5 correct answers.
    f. T. S. Eliot.* 5 correct answers.
    g. Sherwood Anderson. 5 correct answers.
    h. H. Lewis Mumford.* 6 correct answers.
29. Mention one book by each of the following European authors:
    a. Rachilde. No correct answers.
    b. Pio Baroja. 1 correct answer.
    c. Paul Rosenfeld.† 2 correct answers.
    d. Martin Hume. 2 correct answers.
    e. Francis Carco. 1 correct answer.
    f. Oswald Spengler. 4 correct answers.
30. Name three living American architects. 4 correct answers.

* Five of the Young noted that Mr. Eliot is an English subject and nine made the same comment on Mr. Russell. But to Mr. Russell were ascribed "The Golden Bough," "The Story of Philosophy," "I Thought of Daisy," a biography of Napoleon, and "The Mauve Decade." Mr. Aiken's best-known book was mentioned as "Blue Voyages," "Where Blue Voyages Begin," "A Voyage in Blue," and "The 'Blues' Voyage." Not one paper mentions Mr. Mumford's study of Herman Melville or Mr. Anderson's "Marching Men."

† Mr. Rosenfeld's real nationality was known to ten of the Young.

31. Who is Stanley Baldwin? 7 correct answers.
32. Who is Edward Rose Maurer? 4 correct answers.
33. What is seismography? 5 correct answers.
34. List five motor-cars manufactured in England. No correct answer.
35. What is the Federal Reserve? 7 correct answers.
36. Name four pioneers of aviation, all now dead. No correct answer.
37. Finish the verse beginning, "They told me, Heracleitus—" 2 correct answers.
38. Who invented the phrase, "categorical imperative?" 3 correct answers.
39. Who is Thomas H. Benton? 3 correct answers.
40. How many names have been misspelled in these questions? 2 correct answers.

"The College Graduate in Her Community," by Ida M. Tarbell, *Journal of the American Association of University Women*, January, 1931.

Is a college woman an asset to her community when she returns after four years of new environment and influence? To answer this question, the writer makes a rather superficial survey of the position of the returned graduate, and concludes that the solution lies in the college woman's club, we might conclude that she means in the A.A.U.W. This is suggested as the best way to bridge the gap between the highly organized and efficient routing of college procedure and the apparently unplanned life of the community. No solution, however, is offered for the girl who has been "sent" to college, for removal from her home environment, artificially, creates a problem which cannot be settled by usual methods of reorientation.

"Fascist Italy's Suppression of Intellectual Freedom," by C. H. Abad, *Current History*, January, 1931.

Purging Italian universities of anti-Fascists is an activity described by a writer who has recently traveled in that country. Although a law, effective since 1925, specifies that state employees, including professors, "who place themselves in a position which is incompatible with the general political tendencies of the government, by manifestations in or outside office" may be discharged, one use of this regulation pro-

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duced such an uproar that new means of ridding universities of the scourge of free-thinking intellectuals have been devised.

In 1926, the Mayor of Milan suspended the Italian National Convention of Philosophers because discussion of the members had centered on freedom of thought. Fascist students are organized and intrusted with the duty of watching and reporting any derogatory acts or statements. A professor and some of his students who had written a letter of condemnation to a senator who had spoken in opposition to the Lateran treaty were deported to penal servitude. Newspapers, magazines, books, the entire world of print, are completely under Fascist domination. Universities may no longer make their own nominations to fill vacancies in their own staffs. Universities are forced to foster Fascist student organizations, and the professors are compelled to attend religious meetings. It is rumored that the next step in the policy of bringing professors, and all of the country's intellectuals, into line will be the requirement of an oath of allegiance.

"The Level of Thirteen-Year-Olds," by William Orton, *Atlantic Monthly*, January, 1931.

The present system of giving radio programs on the level of thirteen-year-olds is to blame for the sorry condition of radio education in America. Seventy-seven of the 627 stations in the United States are either owned or operated by educational institutions, 51 of which show a weekly average of eight hours on the air, two and one-half hours of which are devoted to education. The American School of the Air is credited with reaching 1,606 schools. Great Britain, with one-third of the population of the United States and one-fifth of the income, reports that five thousand schools received radio programs. The difference in the two situations is explained by the writer, on the ground that Great Britain is not guided by the assumption that the

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adult population has a mental age of thirteen years, and, instead, proceeds on the assumption that a people capable of self-government will be largely composed of intelligent adults. Much supplementary material is published to add to the information of the radio listeners.

FRANCES KIRKPATRICK

"Men in Women's Colleges," by Agnes Rogers Hyde, *Harpers*, December, 1930.

Miss Hyde discusses the change which has taken place in the large eastern colleges for women during the last ten or fifteen years. No longer do the academic offerings and closely allied extra-curricular activities of the college absorb all the girl's time. She studies harder and more intensively during the week, primarily in order that she may have her week-ends free. Vocational training occupies an important place, but it is in the hands of the students rather than the faculty, and is concentrated on but one vocation, "being popular with men." The modern college girl expects to get married, and she goes to college to meet men and to develop techniques that will make her attractive to them. The writer feels that the present-day college girl's interest in men is measured in terms of excitement. She feels that this definitely precludes the pleasures of companionship. She says that the proportion of her college friends who withered on the parent stem is somewhat less than it is among those who did not go to college. In conclusion, she raises the question as to whether men invariably prefer the women who are concentrating upon them.

C. W. HALL

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